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**THIRD GENERATION CPTED?
RETHINKING THE BASIS FOR
CRIME PREVENTION STRATEGIES**

V L GIBSON

PHD

2016

**THIRD GENERATION CPTED? RETHINKING
THE BASIS FOR CRIME PREVENTION
STRATEGIES**

By

Victoria Louise Gibson

A thesis submitted in partial fulfilment of the requirements of
the University of Northumbria at Newcastle for the degree of

Doctor of Philosophy

Research undertaken in the Geography department

January 2016

Abstract

Crime Prevention Through Environmental Design (CPTED) is a concept which has developed over the past five decades through a range of fields. It is based on the premise that modifications to the built and natural environment can reduce both crime and fear, and improve the overall quality of life. CPTED relies on the cooperation of a variety of agencies; however, research has revealed important inherent difficulties regarding multi-agency working and that current practice is neither sustainable nor does it consider social characteristics which may impact upon crime and the effectiveness of CPTED initiatives. Criticisms of diverse factors relating to CPTED have been expressed but how robust such criticisms are and if suitable resolutions exist has not been explored. Using a mixed methods approach, this PhD seeks to improve and update the CPTED concept by addressing issues of communication and collaboration between CPTED stakeholders, and suggests robust ways of enhancing the social context within CPTED planning. The research answers the following fundamental questions: what are the underlying problems of the CPTED concept and how did they come to fruition; and can the approach to CPTED planning be re-examined and updated to reduce the inherent underlying difficulties and improve the transferability and practical application of CPTED initiatives. The research highlights language and definition inconsistencies in the CPTED framework, transferability and engagement issues between CPTED stakeholders and an unestablished but vital link between CPTED and social sustainability and context. The thesis delivers three major academic contributions to new knowledge. It firmly identifies failings in the CPTED concept since its inception to present; it proposes an updated framework which is theoretically driven, and represents a holistic catchment of all CPTED knowledge; and it makes a solid link between crime prevention and the sustainable development of communities highlighting its importance for context analysis.

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Author Declaration

I declare that the work contained in this thesis has not been submitted for any other award and that it is all my own work. I also confirm that this work fully acknowledges opinions, ideas and contributions from the work of others. Any ethical clearance for the research presented in this thesis has been approved. Approval has been sought and granted by the Faculty Ethics Committee on June 2014. I declare that the word count of this thesis is 94,267 words

Name: Victoria Gibson

Date 24.01.16

Signature:

Preliminaries

CHAPTER 1: Introduction

1.1: Introduction to the topic

Crime Prevention Through Environmental Design (CPTED) is a concept which considers how the built and natural environment can create opportunities for crime and impact upon fear and the quality of life of communities. Its theoretical foundations can be found in works dating back to the early and mid- 20th century (see Park 1915; Shaw & McKay 1942; Wood 1961; Angel 1968; Jacobs 1961; Newman 1971; Jeffery 1971, 1977; Coleman 1985); although it did not come to the forefront of research and practice until the Westinghouse demonstrations of Oscar Newman's (1971) Defensible Space principles (See Bickman et al 1978; Kaplan et al 1978; Bell & Young 1978; Bechtel 1978), publicised under the term "CPTED". As a concept, CPTED has developed slowly over the years and has become subject to some rather critical debates (Hillier 1973; Bottoms 1973; Reppetto 1976; Merry 1981; Atlas 1990, 1991; Robinson 1996; Ekblom 2011b); but its importance in contemporary crime prevention which focuses on the crime opportunity rather than the offender, cannot be denied. CPTED relies on multi-agency working across a range of disciplines and practitioners but research suggests there are inherent problematic issues with the concept which mean that it is limited in scope.

This PhD aims to explore the current problematic issues within the CPTED knowledgebase and propose solutions to improve and update the concept.

The PhD adopts a grounded theory approach which operates within a positivist paradigm. The research begins by exploring and confirming the most pertinent limitations of the CPTED concept in terms of bias and influence behind the research network through a systematic methodology. The two most pertinent issues are that the language and communication within the CPTED knowledgebase is diverse and conflicting which causes confusion and a reluctance to engage across disciplines. It also identified that there is a significant lack of social context analysis pre CPTED planning which provides short term crime reduction without longevity.

The research then uses an inductive process to reconstruct the CPTED framework to overcome language and communication barriers and draws upon the concept of social sustainability to define indicators for analysing social context. Both frameworks are tested in a neutral environment without any influence of situational crime prevention measures and the results indicate that the reconfigured framework and social context information significantly impacts built environment professionals ability to interpret and apply the CPTED concept.

1.2: Nature of the problem

Oscar Newman's Defensible Space Theory (1972) offered detailed design solutions for crime prevention at a time when Government leaders were looking to advance current practices (Robinson 1996); and the original contributions by Jeffery (1971, 1977) who coined the term 'CPTED' were largely ignored. Jeffery's theory of CPTED reinforced the social, internal element of the environment and that the perceptions and social conditions of communities need incorporating into crime prevention planning; something which Jeffery failed to operationalise. Current CPTED approaches, derived from Newman's principles only focus on the external physical environment of the place; a source of critical debate in recent years.

In the UK, the Crime and Disorder Act (1998) made crime prevention the shared responsibility between law enforcement agencies, local authorities and the wider public. With the formation of Crime and Disorder Reduction Partnerships as a response to such legislative developments, the principle of Community Safety was born which delivered multi-agency services through statutory partnerships. Laycock (2001) described the Crime and Disorder Act as "*one of the most significant pieces of legislation in support of crime reduction*" (2001:21); although in relation to built environment professionals who have a vital role to play in the implementation of CPTED principles, Kitchen (2009) argues that very little notice of this legislation was taken. This was suggested to be the result of conflicting principles and policies where crime prevention was not the priority of the planner.

1.2.1: Social context

As it currently stands, the development of CPTED has been somewhat disjointed. Uneven academic development pre Westinghouse era meant the concept was not fully developed and Jeffery's original and important contributions were largely ignored. Government funding for Newman's principles through the Westinghouse demonstrations were considered a 'quick fix', and an unsustainable one at that. Any concept which aims to improve the quality of life of people, must consider the characteristics of those people and their relationship to the environment. Currently, CPTED approaches are often criticised for being architecturally deterministic with minimal consideration of the social environment, or how human perception of the environment impacts the way in which people behave, including their propensity to engage in active guardianship (Robinson 1996; Smith 2007; Reynald 2011; Grohe 2011). Whilst opportunities for offending may be reduced, the perception of environments and how this impacts broader determinants of crime such as fear, social exclusion and poor quality of life is still not an integral part of the CPTED process; this has the propensity to restrict the longevity or intended social impact of CPTED initiatives.

1.2.2: Communication and collaboration

In the current age of multi-agency working where crime reduction is a shared responsibility, CPTED should play a central role. However, as this thesis will demonstrate, concepts are misinterpreted, guidance is inconsistent and there are conflicts of interest with regard to planning decisions. Research confirms that lack of engagement may be a direct consequence of conflicting guidance and knowledge available to and used by professionals in the field (Armitage 2004; Zahm 2005; Armitage 2006; Parnaby 2006; Kitchen 2010; Ekblom 2011b; Gibson & Johnson 2013) and therefore improvements are needed to reduce such barriers.

1.2.3: Longevity of CPTED initiatives

Since the Rio Earth Summit in 1992, sustainability has been very much at the forefront of current practice in built environment fields. There are many inherent links between CPTED and sustainability as discussed by Cozens (2008); Poulsen (2013); Kitchen (2009); Marzballi et al (2011) and Glasson

and Cozens (2010) and it is argued that more formal integration between CPTED and sustainable development practice is needed. As it currently stands CPTED is not considered to be a crime prevention initiative with a 'sustainable' component due to the lack of consideration for social context and the evaluation of characteristics which may inhibit CPTED initiatives; likewise, sustainable development practice is limited without sound crime control mechanisms in place, since crime is a potentially degenerative factor in any community.

1.2.4: Importance

Many issues have been recognised in the CPTED field which not only restrict engagement in multi-agency collaboration but also limit the development of the CPTED concept due to its inherent underlying issues. What is interesting is that the current approach does not reflect its potential to contribute towards broader sustainability efforts and the unstructured development of its past has left a bad taste in the mouths of those who have the power to take it forward. Advancements which reduce some of these issues so that CPTED can be implemented on a statutory basis would not only help control crime and improve the quality of life of communities, but would also improve the understanding and ability to implement CPTED across built environment fields, and help professionals understand the inherent link between CPTED and sustainable development.

1.3: Objectives of the thesis

Three research gaps are identified in this thesis. The first identified barriers to multi-agency collaboration; the second identified issues relating to the transferability of CPTED knowledge into built environment practice and the third identified that CPTED and sustainable development must be formally embedded within current practice and policy as an integrated approach. Previous studies have called for research to update and improve the CPTED concept in terms of its guidance and integration with sustainable development practice and policy (Cozens 2008; Ekblom 2011b; Poulsen 2013).

This thesis therefore has one very clear overarching aim, which is to explore the current problematic issues within the CPTED knowledgebase and propose solutions to improve and update the concept.

It will explore issues affecting the implementation of CPTED, the source of the problems, if and how they can be reduced. Strategies to reduce CPTED's issues and contribute towards the development of a more holistic, sustainable and integrated approach to improving quality of life of through crime prevention will then be proposed. The thesis recommends that the basis from which crime prevention strategies derive must be reconsidered to reflect conditions of the physical and social environment as well as the sustainability of communities.

The following research questions will guide the development of the PhD and its emergent methodology:

Research Question 1: What are the key criticisms underlying CPTED and which are most pertinent to improve the application of the CPTED concept and for further exploration in this research?

Research Question 2: What is the basis of the main CPTED criticisms and can they be resolved?

Research Question 3: Does the proposed updated framework and the established link between CPTED and social sustainability provide foundations for an improved and updated CPTED concept?

Research Question 4: Do professionals recognise that the proposed changes may positively improve the use of CPTED in professional fields?

1.4: Structure of the thesis

The following chapter will conduct an extensive literature review, introducing key problems in the field and highlighting areas of focus for this thesis. Chapter three will report on the methodological process adopted for this PhD and how this contributes towards the overall objectives of the thesis. The analysis begins in chapter four by systematically exploring criticisms in the CPTED field. The findings establish which criticisms are considered most pertinent for further exploration to improve and update the concept. The chapter concludes by arguing that the two main issues effecting CPTED

initiatives is poor communication and collaboration between CPTED stakeholders and that CPTED currently has no formalised or theoretically grounded process for analysing social context.

Chapter five explores an exhaustive sample of academic material on all aspects of CPTED to identify the source of communication and collaboration difficulties. This chapter confirms that guidance is diverse and conflicting and has poor theoretical structure. Here, analysis clarifies what changes are required to improve guidance and the transferability of CPTED knowledge. The purpose of this was to identify the source of CPTED problems and how they could be reduced.

Chapter six builds on the theoretical foundations of the CPTED concept and using findings from chapter five, the CPTED framework is restructured and relabelled. The proposed changes are intended improve the integrity and theoretical foundation of the CPTED knowledgebase and in turn improve the understanding of CPTED's objectives and help professionals interpret the relationship between its principles. The proposed framework began the initial process of updating the CPTED concept and was intended to reduce existing barriers of language and communication. The practical transferability of this framework was tested in an empirical study in chapter ten.

Chapter seven explores current practice guidance for CPTED available to and used by professionals in the field. This confirmed a gap between research and practice knowledge and that guidance in practice is also diverse and conflicting. The proposed framework terminology was introduced to professionals via a questionnaire survey which indicated that the framework is understood and the theoretical links are clear. The purpose of this chapter reinforced the inherent framework and terminology barriers and that they were not just confined to academic material.

Chapter eight introduces the concept of social sustainability, highlighting the relationship between sustainability and crime prevention and reinforcing the idea that crime prevention needs integrating into sustainable development practice. A sample of literature on social sustainability is explored and indicators are identified. A model is proposed for analysing social context and suggests that exploration of the indicators will help identify characteristics of the environment considered by communities to impact upon their quality of life and to identify characteristics which may restrict

effective crime reduction initiatives. This model is used later in the thesis to test its impact on professionals' interpretation and application of the CPTED framework.

Chapter nine introduces the study area- the St Augustine region of Trinidad and Tobago and the justification for this area being chosen for the research. The chapter concentrates on the history and development of the country, and how context plays a vital role in the current crime issues faced today.

Chapter ten tests the transferability of the proposed CPTED framework with built environment professions, highlighting barriers to interpretation and application. This chapter acts as a barrier set for analysing change in professional's interpretation and application of the CPTED framework post context provision. It confirms that the framework is relatively well received but implementation is difficult due to a lack of social context knowledge by professionals.

Chapter eleven explores the indicators of social sustainability with local community residents. During these focus groups, local residents used the social sustainability framework to identify features of their environment that impacted upon crime, fear and the quality of life. These features were then explored through data analysis (See Appendix I) to provide relevant context information to built environment professionals.

Chapter twelve focuses on analysing the impact of context provision on professional's ability to interpret and apply the CPTED framework. The chapter analyses how barriers identified by professionals in chapter ten have changed post context provision and the implication this has on advancements in the field.

1.4.1: Findings

Conclusions in this thesis confirm and reinforce the implications of key issues found in early parts of the research, that language and communication of the CPTED concepts is poor which impacts upon the engagement of professionals in the field. It also demonstrated that current practice does not consider social context in CPTED planning, which reduces the longevity of crime reduction effects and causes further collaboration difficulties due to a lack of knowledge for prescriptive

implementation and failure to recognise the inherent relationship between CPTED and sustainable development. This thesis provides a remedy for reducing communication barriers through an improved guidance framework and language and structure updates which reflect and reinforce the underlying theory of the concept. A more formal link has been developed between CPTED and sustainability and indicators have been used to provide local context analysis of risk to crime, fear and reduced quality of life for professional evaluation in CPTED planning. Results confirmed that both the CPTED framework and social context were impactful to CPTED planning, particularly in private planning consultancies which are not bound by bureaucratic and institutional restrictions, or poor governance. Governance issues have been identified as problematic, particularly in planning and sustainable development ministries who control and regulate the built environment; and it is argued that crime prevention experts in the UK are the least responsive to advances in current practice. The key issues to be highlighted here is that improvements can be made and barriers can be reduced if the correct policy and governance structures support it.

Preliminaries

CHAPTER 2: Literature review

2.1: Introduction

In order to explore the field of Crime Prevention Through Environmental Design (CPTED) and appreciate the complexity of its development over the past few decades, it is important to explore the broad scope of academic literature and take into account the early theoretical developments of the concept over time. Prior knowledge of CPTED suggests that its development has been somewhat fragmented. Consequently, academics and practitioners have expressed a number of reservations highlighting limitations and drawbacks in both research and practice. This is the fundamental reason why CPTED became of interest to the researcher as a PhD research topic.

The research will begin with a broad review of CPTED literature to explore the history and development of the concept over time and the different criticisms that emerged. The structure of this literature review may initially seem disjointed; however, the intention here is to provide a historiography of important milestones in the development of contemporary CPTED. For that reason, the discussion will be structured chronologically to reflect the natural development of the concept and how specific milestones have influenced the direction of academic debates. Central to this review will be the identification of particular events which may have influenced the emergence of criticisms dominant in CPTED literature and the significance of their impact in practice.

The review will begin by briefly introducing the CPTED concept and exploring the work of early theorists contributing to its development. This will illustrate the philosophical ground from which CPTED derived. The discussion will then explore the work of two main contributors to the CPTED concept, both Oscar Newman (1972) and C Ray Jeffery (1971), the politics in relation to their early contributions and the subsequent criticisms which emerged from their writings. These criticisms particularly focused on the evidence base from which CPTED was derived. In recognition of the

response to this criticism, the review will then briefly discuss more contemporary theoretical developments, proposed to strengthen the evidence base of the concept.

The latter sections of the review will explore more contemporary issues which reflect the lack of social context in CPTED development and the emergence and failure of 2nd generation CPTED which attempted to reduce this knowledge gap. Of significant importance in this review are the legislative developments in England and Wales during the latter part of the 20th century which revolutionised crime prevention practice and enforced multi-agency and multi-disciplinary collaboration as well as an international comparison of built environment legislation from other contexts worldwide. Whilst legislative developments in the UK were a positive step forward in recognising CPTED as a vital component of crime prevention, it has undoubtedly shed light on broader communication difficulties and CPTED's current position which is arguably detached from the broader remit of planning and urban design.

2.1.1: CPTED

The relationship between crime and the environment has been studied for a number of decades and has given rise to a succession of schools and sub-disciplines. In turn this has brought about a number of place based crime prevention concepts; one of which is Crime Prevention Through Environmental Design (CPTED). Despite the now lengthy history of this development, the question remains - is it practically and empirically sound?

Crime prevention in the UK and many parts of the world has historically relied on traditional forms of policing as a method of crime control, depending entirely on reactive responses and custodial sentences to restrict further offending. But since crime is a socio-spatial phenomenon and naturally traverses across time and space in which humans exist and function, natural instinctual forms of defence have existed as long as people themselves. History tell us of the importance of castle walls as mechanisms to keep out intruders and protect against attack; actions which have transcended into modern day crime prevention efforts under the broad spectrum of Environmental Criminology and

Crime Science (See Brantingham & Brantingham 1981; Bottoms & Wiles 1997; Smith & Tilley 2005; Wortley & Mazerolle 2013).

2.1.1.1: Early Theorists

Contemporary theory on the relationship between crime and the environment and subsequently CPTED, originated from the early publications of the ‘Chicago School’ of sociology, especially Park and Burgess (1925); two academics who studied city structures and social behaviour. Their call for systematic understanding of what to explore in this debate was a critical turning point in thinking about crime. In doing so they stimulated thinking around neighbourhood characteristics and their impact on criminality. Their work documents how urban layouts can determine the functions of human behaviour whilst providing a theory, the core principle of which is that place matters. They also recognised that although cities were physical components, they contained social and moral structures that could become disorganised. Thus they sought to explain the role of social constructs such as unemployment as potential determinants of criminal behaviour (See Park and Burgess 1925).

Subsequent work by Shaw and McKay (1942) and the development of the Chicago School Theory examined the impact of ‘community’ on crime and claimed that high crime rates can be found in neighbourhoods characterised by ethnic and class heterogeneity, high transiency and a disproportionate number of youths. Their research advanced that of Park and Burgess’ (1925) by identifying that criminal behaviour was not caused at the individual level but rather that it is a normal response by normal individuals in abnormal conditions; and that social conditions were a vital component of offending opportunities. These theories strongly indicated that crime is both socially and spatially determined and that both place and the wider socio-economic context of place is vitally important in determining and therefore preventing crime.

The idea of CPTED began to form when Elizabeth Wood (1961), a director of the Chicago Housing Authority, developed security guidelines which focused on improving the visibility within public housing units to enhance surveillance opportunities and improve legitimate behaviour. Her work focused particularly on teenagers and delinquent behaviour as a result of the lack of facilities

surrounding residential complexes. Her idea was to create communal areas by changing the physical environment in a formal way to encourage socialisation which became a fundamental component of CPTED theory in later years (See Newman 1971).

In recognition of the link between environmental constructs and crime opportunities and the surfaced interest in environmental design; research began to emerge which considered the way in which the environment created or reduced opportunities for crime through planning and urban design. Most influential of this shift in emphasis was the work of Jane Jacobs (1961). Jacobs set out to attack urban planning policies and subsequently proposed a new set of principles for considering urban design. She highlighted from her observations in Greenwich Village in the late 1950's that certain design features could reduce crime in residential areas. These included the orientation of buildings to encourage surveillance by residents; the separation of public and private space to clearly differentiate domains, and the proximity of public places to intensively used areas. Most influential in Jacobs work was the recognition of the role of the public in surveillance and capable guardianship efforts, which Jacobs referred to as 'eyes on the street'.

"The first thing to understand is that the public peace- the sidewalk and street peace- of cities is not kept primarily by the police, as necessary as police are. It is kept primarily by an intricate, almost unconscious network of voluntary controls and standards among the people themselves, and enforced by the people themselves" (1961:31).

Jacobs' ideas opposed the principle of zoning, the tendency of traditional urban planning to divide cities into specialised districts i.e. commercial, residential, and industrial; along functional land use lines. Her argument proposed the diversification of land uses to increase street activity and stimulate informal networks, increase social control and ultimately enhance surveillance opportunities.

Whilst Jacobs has been heavily criticised for projecting a romanticised view of late 19th century industrial cities (See Zukin 2011), her idea of 'eyes on the street' was a cornerstone for crime prevention thinking. Specifically, the idea that the environment could be manipulated in a way which could influence natural surveillance and guardianship, so to extend the boundaries of crime control

beyond the sole responsibility of the police. Although Jacobs offered little practical application at that time, the principles she proposed were extremely influential in subsequent research and theoretical development, and are evident in research and practice today (See for example Mayhew 1979; Jeffery & Zahm 1993; Clarke 1995; Gilling 1997; Crowe 2000; Cozens 2005; Schneider 2005; Zahm 2005; Reynald 2011; Clancey et al 2012; Cozens 2015).

Architect Schlomo Angel (1968) found that Jacobs' principles were not applicable to all environments, therefore highlighting the importance of context in the designing out crime debate. His findings identified the notion of 'critical intensity zones' which occurs when land use intensity increases but does not exceed a threshold for suitable capable guardianship. He argued that when this threshold is exceeded, surveillance levels are reduced, increasing the vulnerability of street users. However, Angel's study however offered no data to support his assertions and was later criticised by academics such as Wilcox (1974), who through testing of his principle, suggested that his theory did not reduce robbery in Oakland, California.

2.1.1.2: C Ray Jeffery

By the early 1970's, research on crime prevention design in the built environment and the way in which behaviour can be manipulated through environmental modifications had traversed through fields of criminology, urban planning, architecture and sociology, and began to attract considerable attention from academics such as C Ray Jeffery, a Criminologist who coined the phrase "CPTED" (Jeffery 1971). The work of Jeffery and others further explored the intricate relationship between man and his environment and the impact this had on human behaviour. His main argument was that sociologists and criminologists had greatly overstated social causes of crime and subsequently ignored both environmental and biological determinants which ought to be the focus for reducing environmental opportunities for crime. In his book *Crime Prevention Through Environmental Design*, Jeffery collectively evaluates the exploration of criminality through each discipline and underlines their importance and contribution to a new model of crime prevention.

Jeffery's research was based on the concepts of experimental psychology, represented in Modern Learning Theory (Skinner 1938). The concept of CPTED developed from his experience of a rehabilitation project in Washington D.C. which aimed to control juveniles within their school environment. His CPTED approach accentuated the role of the physical environment and adapted it to Sigmund Freud's (1922) pleasure pain principle; claiming that the environment can develop pleasurable and painful experiences for the offender which may hold the capacity to alter behavioural outcomes. Jeffery uses the term 'environment' in many different contexts e.g. 'the parent' or the 'social welfare services' as unintentional conductors of reinforcements of undesirable behaviour. Examples provided by Jeffery include, a teenager who lives away from home smoking cannabis while his parents supply him with money for university is an example of a situation where the 'environment' (parents in this case) reinforces undesirable behaviour; or how social welfare systems may allegedly perpetuate dependency and poverty because they reinforce the need not to work. What Jeffery is suggesting here is that we can better design these environments in which humans operate, to prevent the type of behaviour we wish to control (poverty, crime, alcoholism etc.). Crucially, his research also accentuates the notion of the environment being a much broader notion than the typical physical built environment which, thus reinforcing the need for a wider consideration of the ways in which behaviour is influenced, beyond that of the physical environment alone. Jeffery was however working in an era when serious consideration and theoretical development of the physical environment creating opportunities was at an early stage without any academic work to fall back on. This could have impacted upon the stagnant development of Jeffery's contributions and the subsequent focus of CPTED's development at that time.

Jeffery highlighted a new approach to human behaviour in the form of behaviourism and environmentalism. He observed that crime and undesirable behaviour had previously been regarded as a biophysical phenomenon, regarded as an adaptive process to environmental conditions. From this, he emphasised the need to consider behaviour as a future orientated process in which undesirable behaviour is a result of material or social rewards, rather than a consequence of past trauma or broken families etc. To change this criminal behaviour, he argued that we must remove the environmental

reinforcement which maintains such behaviour and these environmental reinforcements can be in any form.

Jeffery draws upon these reinforcements which have parallels with the foundations of Rational Choice and Routine Activity Theories which will be discussed later. He describes the commission of a criminal act to involve the potential consequence of punishment; therefore, the gain from the criminal act must be weighed against the risk of punishment. Four elements of criminal behaviour are developed here:

- The reinforcement available from the criminal act
- The risk involved in the commission of crime
- The past conditioning history of the individual involved
- The opportunity structure to commit the act. (1971:177)

Jeffery stresses the importance of opportunity. He argues against traditional criminology by representing the idea that crime is located in the environment, not in the individual; and that there are no criminals, only environmental circumstances which, when presented with reinforcing stimulus and past conditioning history, an offence will take place. Whilst Jeffery's ideas were pioneering at that time, his failure to provide immediate short term solutions resulted in his work being largely ignored and attacked by criminologists at that time (see for example Mannheim 1972).

2.1.1.3: Oscar Newman

Similarly, but not influenced by Jeffery's work, Architect Oscar Newman (1972) began focusing on the role of land and building design in anti-social behaviour. This built on Jacobs', Angel and Wood by enhancing positive territorial attitudes and natural surveillance. His own focus concerned public housing projects in America, with a particular interest in high rise apartments and adjoining land uses. Newman's ideas were influenced by recognising the breakdown of social mechanisms that once allegedly kept crime in order by the public and gave direction and support to local police (Newman 1972). Newman's recognition of this breakdown was also in line with the work of Shaw and McKay (1942), Harvey Zorbaugh (1929) and Louis Wirth (1928) who all considered that high crime rates

were the result of ‘social disorganisation’ and the weakening of groups that once held the community together.

His theory of ‘Defensible Space’ argued that four elements of physical design were to be the main factors in reducing criminal opportunities in the environment:

1. The capacity of the physical environment to create perceived zones of territorial influence (1972:51).
2. The capacity of physical design to provide surveillance opportunities for residents (1972:78).
3. The capacity of design to influence the perception of an area’s uniqueness (1972:102).
4. The influence of geographical juxtaposition with ‘safe-zones’ on the security of adjacent areas (1972:109).

Newman’s principles concentrate on architectural aspects of the environment which promote designs that create or remove crime opportunities by creating an ‘uncomfortable’ environment for offenders. His work was the result of a study in New York which identified a relationship between crime rates and high rise apartment buildings compared to lower crime rates in conventional housing projects and he hypothesised that this was a result of high rise apartments lacking in territorial control and personal responsibility over communal areas. Newman believed that by extending territoriality and ownership over public space, offenders would be less secure in committing crimes.

Whilst Jeffery’s ideas inspired research into the understanding of the relationship between crime and the environment, Newman offered prescriptive design solutions which were subsequently funded and operationalised by the US Government within 2 years of his publication. The Law Enforcement Assistance Administration (LEAA) and the Department of Housing and Urban Development funded a multi-million-dollar project to test defensible space principles under the term “CPTED”. These projects considered CPTED in a range of contexts such as residential, transportation, commercial and educational environments which were historically documented as the first practical applications of CPTED and the first documented CPTED framework (See for example Bell & Young 1978; Bickman et al 1978; Kaplan et al 1978; Kohn et al 1978; Wiles et al 1978). This framework took the form of:

- 1) Access control: focuses on keeping unauthorised persons out of a particular locale.
- 2) Surveillance: the semi-territorial placement of public spaces to encourage responsibility and depriving strangers of anonymity.
- 3) Activity Support: sustaining activities by having related settings complement one another so that legitimate activity is increased.
- 4) Motivational Reinforcement: increasing confidence and a sense of security in victims (Kaplan et al 1978)

Westinghouse funded projects were revolutionary in the CPTED field since they operationalised ideas on the relationship between crime and the environment into practice. This framework was the first of its kind and offered practitioners and academics alike guidance on crime prevention consideration within the built environment. Significantly, contributions by Jeffery were largely ignored and there was very little consideration of broader social constructs influencing crime opportunities in the environment.

The early development of CPTED was political in that the US Government required immediate solutions to rising crime rates and a society that was in need of a quick fix (Robinson 1996). At the time of Newman and Jeffery's contributions to the field, Newman offered prescriptive solutions based on his experience as an Architect. Jeffery's contribution on the other hand attempted to spark debate around the social and biological constructs of human behaviour and its relationship to the environment. Jeffery's work did not provide immediate solutions but rather considerations for academic development in the long term. As a result, Newman's work received significant interest by the US Government who funded his 'Defensible Space' principles under the term 'CPTED'.

Newman's practical design solutions also came at a convenient time for the development of CPTED since the US government had recently passed the National Environmental Policy Act (US Congress 1970), which promoted the enhancement of the environment and set up procedural requirements for all government agencies to prepare Environmental Impact Assessments (EIA's). EIA's were

revolutionary in planning law since they forced an altered thought process of decision makers rather than primarily practical action. Their importance in integrating crime prevention consideration into planning was also later recognised as a turning point for CPTED development (See Glasson & Cozens 2010). The NEPA was enforced as a response to government officials' failure to adequately consider environmental impacts in the decisions they made, most likely due to political pressures and the need for short term benefits. Government officials also lacked information on the consequences of their decisions. The NEPA therefore sought decision making to be a public process. Such strong political developments and a revolutionary change in thinking at this time may have been a significant contributory factor to Newman's work being so influential upon local government planning.

Newman's collaboration with the LEAA sparked controversy over the concept which continued over decades of academic debate. One of the first evaluation reports (Kaplan et al 1978) carried out on the LEAA CPTED demonstrations reported early on that there were difficulties in implementing CPTED due to the lack of effective multi-agency working and the disconnect between disciplines. The authors documented that "unforeseeable contingencies" resulted from an inadequate transition from planning to implementation (1978:6-4), indicating that multi-agency and cross-disciplinary collaboration in this field had insufficient planning and scope to deal with the complexity of CPTED application. Reports on the CPTED demonstrations offered a very detailed account of the planning and implementation process which were both critical and informative to practitioners. Many issues were highlighted, particularly around the ability to plan and execute such a large scale project with a diverse range of agencies and disciplines. What was not considered though is the practical and empirical evidence on which these demonstrations were based. Bickmen et al (1978) in their review of the CPTED demonstrations argued that *"plans for implementation are not always carried out faithfully by the subordinates, even when the agency administrator so prescribes"* (1978:10). This was reinforced by their identification that *"problems are not due to the apparent conscious decision of agency personnel to weaken the programme, but rather to the organisational framework"* (1978:10). This is one of the first indications that in reality, CPTED relies on effective multi-agency working and where suitable engagement is not achieved, the success of CPTED efforts are compromised; an issue still prominent

in more recent academic debates (see Morton & Kitchen 2005; Book & Schneider 2010). A report by Kaplan et al (1978) also documented difficulties in the implementation of the LEAA CPTED demonstrations due to unforeseeable contingencies relating to the lack of planning between agencies. Publications which emerged soon after the work of Newman highlighted issues with regards to the empirical evidence of the approach and subsequent concerns that further research is needed before implementation. It seems reasonable therefore to assume that the failures of the LEAA CPTED demonstrations were the result of a crime prevention initiative which was not adequately researched or sufficiently logistically considered. This suggests that future problems with CPTED implementation were highly likely.

2.2: Review

2.2.1: Empirical evidence

Whilst Newman's publication received widespread attention across a number of disciplines and professions had gained substantial government support, he has not gone without criticisms which have grown in number in recent years. Hillier (1973) claimed that territoriality (i.e. asserting territorial behaviour and ownership over public space) is a simplistic view of human behaviour and its relationship to the environment. He argued that due to a lack of other theories to explain the relationship between behaviour and the environment, "*we might be tempted to look no further and so remain ignorant of the fact that human territoriality is largely discredited*" (1973:540). Hillier was extremely critical of Newman's theory and the role of architectural design in general, claiming that "*Newman's basic argument...linking design to crime appears, on the evidence he gives, to be nonsense*" (1973:541). This stance comes as at a time of scrutiny of Newman's methodological and statistical rigor (Bottoms 1973), a lack of sound evidence (Tijerino 1998; Wallis & Ford 1980; Lavrakas and Lewis 1980) and flaws in the fundamental theories which support it (Walker 1984). Hillier's critique was in fact the beginning of a very interesting but complex era of CPTED development, an era which ultimately has become the foundations of this thesis due to the emergence of criticisms in the field.

It is recognised in this review that criticisms of CPTED are consistent, frequent and potentially damaging to the operationalisation of its principles. CPTED is multi-disciplinary in its nature and relies on a sound knowledge base of theoretical and practical evidence to support effective implementation. Many criticisms will be highlighted in this review and a close inspection of their importance and validity is warranted before the concept can be refined and updated.

Hillier's critique sparked the debate about Defensible Space theory. Bottoms (1974) supported Hillier's argument in his concerns about the validity of Newman's methodological and statistical methods. His argument drew attention to the two housing projects Newman used in his analysis (Van Dyke and Brownsville) which he believed give little support to the theory. Bottoms claimed that *"given the importance of the hypothesis Newman is setting out to demonstrate, this is not really good enough"* (1974:205). Roncek (1975) also supported these claims by arguing that all research on density, housing and crime prior to 1975 has provided unreliable evidence and demonstrated poor methodological approaches.

Concerns about the evidence base of Newman's work so early on in its history is critical to the development of the CPTED concept. Essentially, Defensible Space is the foundation of the theoretical and practical development of CPTED which significantly impacts the validity of the CPTED knowledgebase to emerge in later decades. This issue has remained a consistent theme since the concept emerged in the early 1970s. Mawby (1977) cautioned that planners may have an inadequate understanding of crime and that, rather than jumping straight into practical application, substantial theoretical research is required before implementation. Mawby confirms that there are significant empirical weaknesses in the concept of Defensible Space. He highlights that *"Newman in particular has over-simplified the issues involved, both in terms of the nature of crime and the qualities of defensible space"* (1977:175) and that *"a more rigorous definition of the concept was recommended"* (1977:169) before defensible space could become an operational concept. This opinion was also shared by Gardner (1978) who carried out a number of case studies and concluded that there is insufficient evidence to suitably test and refine environmental approaches to crime prevention. He argues that *"the emerging field has not been given the support it needs to become operational"*

(1978:79). From the research conducted so far, it seems apparent that the theoretical development of Defensible Space was not ready for practical application; but in response to the LEAA CPTED demonstrations, the operationalisation of CPTED took off in the field of planning and urban design as a contemporary and innovative approach to crime reduction.

Concerns about the weak empirical foundations of the CPTED concept were present not only in the UK and American contexts. Stanley (1977) soon recognised the lack of coordinated activity on CPTED in Canada and warned that unless changes were made, *“progress on CPTED would be random, mistakes would be repeated and practitioners will become disillusioned with the approach...and adopt it without any real assurance of the results.”* (1977:41). He argued that many techniques used to reduce crime through environmental design *“require much more careful monitoring before general benefits can be claimed”* (1977:24) and that many CPTED applications have developed independently of academic research. This warning came almost 50 years ago and findings of this review suggest that such problems are still evident today. At a time when it was emerging as a new approach to crime prevention but when the evidence base is weak, the multi-disciplinary nature of the approach left it vulnerable to adaptation and manipulation by practitioners with limited understanding about the complexity of crime and criminal motivation.

This assumption was also strongly reinforced by an evaluation of the 1978 CPTED demonstration conducted by the Law Enforcement Assistance Administration (See Pesce et al 1978). The final report on the success and failures of the demonstrations, whilst remaining generally positive about the approach, did highlight a number of unresolved issues, particularly around the definitions of CPTED and the evidence base upon which it was grounded. The authors warned that potentially damaging effects could surface in later decades if these issues were not resolved early on. They argue that *“the CPTED approach is so broad and its theoretical foundation so incipient that virtually any planned crime prevention activity can be part of CPTED”* (1978:108). At this point, it seems that the lack of research and evidence base conducted before CPTED was operationalised had begun to negatively impact the transferability of the approach from research to practice. CPTED had most certainly got off to an uneasy start into a field with conflicting agendas and varied knowledge on crime prevention. It

is without doubt that many problems in this field are a result of CPTED being implemented before it's conceptual basis was fully developed.

One substantial attempt at improving the evidence base was made by Alice Coleman, a Geographer from Kings College London whose work built on Newman's concept by studying signs of disorder and its correlation with design features. Her findings which were published in '*Utopia on trial*' (1985) were however controversial and attacked by academics such as Hillier (1986) who suggested her findings were a statistical artefact. Nonetheless, her findings still contracted £50 million from the government in 1991 to test the ideas under the Design Improvement Controlled Experiment (DICE) project (see Coleman 1992). The effectiveness of this project however still remains controversial (Towers 2000).

Whilst the issues highlighted in relation to the empirical evidence and methodological rigor of Newman's work were predominantly highlighted during the early development of CPTED, there is still evidence that the empirical foundations of his work are still contested in more recent decades (see Cozens et al 2001; Ratcliffe 2003; Hillier & Sahbaz 2008).

2.1.2 CPTED Theory

In light of the critical debate on Newman's academic rigour, research began to emerge which focused explicitly on testing the relationship between human behaviour and the built environment. Cohen and Felson (1979) published an influential study which discussed how crime acts require convergence in space and time of likely offenders and suitable targets with the absence of capable guardians. This idea was referred to as Routine Activity Theory and is influential to the understanding of CPTED components. The theory is associated with the absence of effective controls. For a crime to occur, a motivated offender must be in the same location as an attractive target without the control or deterrence of someone or something which prevents the crime from occurring. Routine Activity provides a macro perspective on crime since it reports on how alterations in the socio-economic composition of the environment can influence the routine activities in which people partake throughout the day and night, creating patterns of social interaction. Crime is considered to be a

natural phenomenon, one which is dependent upon the opportunities which are present in the immediate environment. If targets are unprotected and the rewards of committing a criminal offence are sufficient, the motivated offender will commit a crime (Cohen & Felson 1979). The basis of this idea is deeply embedded within the CPTED principles. The idea of surveillance and territorial behaviour is supported by this theory in that when surveillance opportunities are increased and people exert a level of control and territorial behaviour over their local environment, the capable guardianship of public space is increased, therefore increasing the risks posed to potential offenders and reducing the risk to potential targets. Routine Activity theory also demonstrates the importance of social context as a necessary component of understanding crime. Cohen and Felson (1979) discuss how the day to day nature of behaviour is affected by social conditions which influence the intersection of suitable targets, capable guardians and motivated offenders. The role of RAT in CPTED initiatives however focuses largely on surveillance and guardianship at the expense of wider social influences. Routine Activity Theory is very well tested and is verified as an empirically sound, robust theory for a range of crime types (See for example Sherman et al 1989; Madriz 1996; Osgood et al 1996; Groff 2007; Tewksbury & Mustaine 2001; Marcum et al 2010). Its position in the CPTED framework is therefore without question, however, it is identified that the role of social conditions may require further exploration in this PhD.

Rational Choice Theory was later developed by Cornish and Clarke (1986) and is based on fundamental tenets of classical criminology. The authors propose that behaviour is a rational choice which is motivated by the avoidance of pain and the pursuit of rewards which also coincides with early precepts proposed in Jeffery's model. Rational choice provides a micro perspective in that crime as behaviour is chosen due to the material gains which is consciously evaluated based on the inherent risks, effort and rewards. It is assumed that criminal acts are the result of rational decision making process which weighs up the potential benefits and consequences associated with committing an offence which is then followed by a rational choice on the basis of this evaluation. Before a criminal act takes place, a potential offender therefore assesses the chances of getting caught (effort), the potential consequences of being apprehended (risk), and the value to be gained by committing the

crime (reward). Whilst Rational Choice Theory is supported by some and has been applied widely across criminological research (See for example Cornish and Clarke 1987; Paternoster and Simpson 1993; Keel 1997; Gul 2009) it has sparked somewhat controversial debates amongst academics who argue its various limitations. These particularly relate to (amongst others) the reliability of empirical evidence of pure rational decision making; that concepts within RAT are all borrowed from competing theories considered to limit pure rational decision making (Vito et al 2011); also more specifically that it can only be applied to reducing property crime (Hayward 2007). A recent study by Loughran et al (2016) however has confirmed through testing of a fully specified model of Rational Choice that offending behaviour is consistent with rational responses to cost and benefit of crime which were consistent across different sub groups. The authors argue that RCT can be classified as a general theory of crime. Despite the above criticisms, RCT is considered important in criminological research since its attention is focused on situational factors which have the propensity to influence criminal behaviour.

These two theories are inherently linked since rational choice accounts for the offender decision making process when faced with a crime opportunity and puts measures in place to increase the risk and effort needed to proceed with the criminal act. Routine activity theory takes into account how opportunities come to exist in the first place and suggests measures which can be taken to remove them. Rational choice theory is supportive of the CPTED concept, particularly around obstructing access to targets and increasing the effort required to proceed with an offence.

A third major yet controversial theory to have emerged from debates on the relationship between behaviour and the environment is termed Broken Windows Theory (Wilson and Kelling 1982). This focuses on the importance of disorder and incivilities which produce an environment within which there is the propensity for minor crimes to escalate into more serious crime. Whilst minor crimes and disorder are not necessarily causal links to serious crime, they are said to have significant impacts on fear, withdrawal and social disorganisation which in turn allow more serious crime to escalate due to a perceived lack of social control (Wilson & Kelling 1982). Broken Windows is the most controversial of all three theories particularly due to its empirical soundness and ambiguous assumptions. Critics

have argued that its founders are ‘aversive racists’ (Stewart 1998), that it’s only conclusion is that police should increase arrests for volume crimes (Bowling 1999) and that has often been discredited as a theory at all (Sheldon 2014). Whilst these criticisms are acknowledged, this research argues the importance of Broken Windows theory, not in terms of offender motivation but in terms of the impact this has on non-offending populations and the way in which this may alter their routine activities, thus reducing capable guardianship and increasing vulnerability for further crime and victimisation. With this in mind, the importance of social context is revisited and the importance of wider indicators of crime, fear and quality of life.

2.2.2: Social Context

Following the development of these very influential theories, the debate about the empirical evidence in support of the CPTED concept began to shift in focus. Whilst it was largely accepted that Newman’s evidence base was ultimately flawed, subsequent studies which attempted to rectify this problem only unearthed wider problems. Following the publications of Routine Activity, Rational Choice and Broken Windows theories, many researchers began to discuss the fact that the theoretical and practical foundations of Defensible Space and subsequently CPTED are fundamentally flawed. This is because the evidence provided by Newman to suggest that particular design modifications will have the desired impact on human behaviour were not at that time considered to be theoretically grounded or empirically tested in light of new developments. Rosenbaum (1987) looked at community crime prevention and fear reduction and raised concerns about the theoretical and empirical foundation of the approach. He argued that there is little evidence that local residents will engage in natural surveillance, social interaction or bystander intervention as a result of community crime prevention efforts yet CPTED relies on such responses.

Whilst CPTED relies on environmental cues impacting upon offender behaviour, it also relies primarily on legitimate responses to environmental cues in the form of active guardianship, community control and generally territorial behaviour. Without consideration of the various factors which may inhibit such responses, this has fundamental problems for the sustainability of the approach. At this time, Rosenbaum developed a strong argument to stimulate further thinking about

the impact of physical design on social behaviours and how these behaviours act as key variables in crime control and community policing (see Rosenbaum 1988). This shift in focus from the mid 1980's onwards became the basis of another longstanding criticism to emerge which argued that there was a substantial lack of social context in CPTED planning which substantially reduced the impact and sustainability of the concept.

The debate around the lack of social context has commonly been referred to as architectural determinism (Taylor et al 1980; Merry 1981; Smith 1986), which assumes that the built environment is the sole determinant of social behaviour, an assumption which has derived through successive CPTED research. The idea of the social environment and its impact on crime and the subsequent impact of CPTED first emerged in the work of Hackler et al (1974) when they concluded that the social context of the environment will undoubtedly impact on the propensity for residents to intervene; a factor which had previously rarely been considered. Conditions that they identified related to the occupational rank of community members and their length of residence in the community. At this time, it became apparent that design alone could not influence behaviour which was controlled and influenced by many complex physical and social drivers.

When C Ray Jeffery (1971) introduced his version of CPTED, his intention was not to propose a holistic method for crime prevention, but rather to encourage thinking about the how the environment impacts the human brain, and subsequent behaviours. Unfortunately, this line of thought did not progress through CPTED development which has undoubtedly had a major impact on the subsequent development of the theory and the realisation that social conditions have largely been ignored.

The debate about architectural determinism began by questioning human responses to environmental cues, this followed conclusions made by Hackler et al (1974) that guardianship cannot always be achieved through design modifications. Brown and Altman (1981) argued that territorial behaviour is dependent on a number of social, physical and psychological features in which generic design specifications will not apply. Their study focused on territorial markers and the impact on offender's rational behaviour and concluded that *"there are a number of external variables that may affect the*

rate, nature and dynamics of the decision making process" (1981:73). Findings like this began lengthy debates about the impact of broader influences on human behaviour beyond that of the physical environment (See Mayhew 1981; Brower et al 1983; Normoyle & Foley 1988). Influential in this debate was Merry (1981) whose research looked at patterns of intervention against crime in an American housing estate containing defensible space design. Merry suggested that "*design has the potential for releasing defensive behaviour, but only under certain conditions*" (1981:398) and that "*architectural strategies alone are not adequate*" (1981:419). The basis of this conclusion was that the cultural diversity of the resident population and the resulting distrust between them prevented accurate characterisations of insiders and outsiders thereby blocking the emergence of effective informal social control. These findings were the foundation of the debate about the importance of social context and that 'one size fits all' mentalities will not apply universally (see Cisneros 1995; Phillips 1996). Merry's research also highlighted the notion that aspects of the physical and social environment which alter the perception and use of space by legitimate users may actually restrict effective CPTED intervention if they are not carefully considered.

Since then, there has been a wealth of research which focuses on physical and social characteristics of territorial functioning and the impact of certain conditions on the propensity for people to engage in natural guardianship. Taylor et al (1984) stressed that levels of fear amongst communities varies between ethnic groups and that social ties have precedence over physical design in determining territorial behaviour. Taylor et al (1985) also confirmed that socio-economic conditions also significantly impacted upon changes in confidence and levels of fear which determines the level of natural guardianship exerted by users of the environment. This established that "*physical impacts are conditional i.e. dependent upon the overall neighbourhood context*" (1985:261). A very influential study by Felson (1995) discussed guardianship from a rational choice perspective by introducing the idea of target 'guardians', offender 'handlers', and place 'managers'. Whilst his thesis emphasised the role of supervision, Felson identified a weakness in that a deeper understanding of people's willingness to intervene is required before they can be depended upon as capable guardians, handlers

and managers. He stressed that a personal assigned responsibility is needed to engage in active guardianship.

"Crime will be more readily discouraged when people have personal assigned responsibility and clear focus on places or settings. If society continues its dependence upon diffuse and general responsibility, the chances for reducing crime diminishes accordingly" (1995: 64).

A thorough understanding of people's relationship to particular spaces is therefore needed before guardianship can be improved and relied upon in any CPTED strategy.

The theory underlying the relationship between crime and the social environment emerged from criminology, sociology and psychology disciplines. The social environment can impact upon crime and the perception of crime in many way, for example poverty and deprivation can increase the strain upon individuals to commit acquisitive crime for monetary gain. Other factors that can influence behaviour is the influence that interaction with others and norms that are learned during childhood development. Those who develop within a criminogenic environment are said to be more likely to become criminals in the future (Akers 1973). These factors require consideration when analysing the risk of crime in a residential area.

Strain Theory was introduced by Emile Durkheim and advanced by Robert Merton in 1957. The core idea is that society puts pressure on people to conform and that this can only be demonstrated through the achievement of goals for material status or class, as well as monetary goals. For some individuals, the attainment of goals cannot be achieved through legitimate behaviour and the pressures they face may encourage them to become deviant to achieve the desired goals. Merton (1957) argued that when people are faced with strain there are five ways to respond:

1. Conform- pursue goals through socially approved means
2. Innovation- use socially unapproved means to obtain culturally approved goals
3. Ritualism- Use the same socially approved means to achieve less elusive goals
4. Rebel- Reject the cultural goals and means and work to replace them (Merton 1932; Bierstedt & Merton 1950).

Social Learning Theory was proposed by Ronald Akers in 1973 in which he proposed that criminal behaviour is more likely to occur when an individual associates with people who engage in or approve of crime. This pattern of association is believed to create criminal role models, reinforcement of criminal behaviour and the development of pro-crime attitudes.

These theories amongst others are important for understanding how the complex social relationships within and between communities and the impact that this can have on the perception of and risk to crime.

This section of the review highlights a significant indication that CPTED is potentially flawed if social context analysis is not a necessary component of crime prevention planning. Whilst the issue came to light in the mid 80's as evidenced throughout the discussion, there is still significant evidence to suggest that the problem of social context being absent from CPTED planning and its importance in ensuring sustainable crime reduction effects still remains in more recent years (see Cozens et al 2002; Smith 2007; Cozens 2008; Ekblom 2012; Kamalipour et al 2013). This is clearly an issue requiring further investigation in this thesis.

2.2.3: Second-generation CPTED

In an attempt to rectify this problem, Saville & Cleveland (1997) proposed a Second-generation CPTED as a new approach to crime prevention. It has been described by Saville & Cleveland as an expansion to encompass effective psychological and sociological dimensions to environmental design. Their ideas developed from the major criticism of First-generation CPTED-its lack of consideration for the socio-economic and demographic dynamics within communities which can reduce or enhance the efficacy of CPTED strategies. They argued that;

“We have forgotten that what is significant about Jacob’s ‘eyes on the street’, not the sightlines or even the streets, but the eyes. Second Generation CPTED recognises that the most valuable aspects of safe communities lie not in the structures of the brick and mortar type, but rather in structures of family, of thought and most importantly of behaviour” (1997:1).

The four main principles of Second Generation CPTED are:

- 1) Ecological Threshold: The limited capacity for certain activities and functions (Saville and Cleveland 2003)
- 2) Community Culture: Bringing people together for a common purpose to satisfy the needs of community members and to share a sense of place
- 3) Community Cohesion: Enhancing the relationships between residents to create effective networks of engaged citizens to share a common interest and increase social control
- 4) Connectivity: Identifies the needs for communities to make contact with outside agencies to enhance the skills needed to enable them to deal with small scale issues (Saville and Cleveland 1997)

The proposed ideas of Second Generation CPTED draw upon the Chicago School research (see Shaw and McKay 1942, Zorbaugh 1929 and Wirth 1928) and the development of social disorganisation theory which generally hypothesise that low economic status, ethnic heterogeneity, residential mobility and family disruption lead to community social disorganisation; ultimately increasing crime and delinquency rates. It seems that Second-Generation CPTED's principles are designed to prevent social disorganisation and create a more cohesive society, so to prevent crime by increasing organisation within neighbourhoods, strengthening community networks and developing informal social control. Because social disorganisation theory has little evidence to support crime prevention (Sampson and Groves 1989), there is no verification that this initiative alone would be effective.

An ethnographic study was carried out by Janet Foster (1995) on a West London housing estate, which demonstrated statistically higher than average crime rates and many of the 'design failures' of public housing. The residential blocks consisted of features typical to a high crime area based on social disorganisation theory, e.g. poor, single parent families and ethnic minority groups. According to Second-Generation CPTED principles, this would generate low community cohesion, poor connectivity and an ecological threshold which has exceeded the tipping point. The results from the study however, demonstrated strong social bonds between residents generating well-built community cohesion (Foster 1995). An area suffering high crime rates with good community cohesion and social networks, raises concern about the extent to which Second Generation CPTED principles as they are

currently understood, could positively affect communities already high in crime. The possibility is that the application of principles could in fact increase crime, by encouraging criminal networks amongst communities and developing shared interests in criminality.

To date, there is little indication of successful Second-generation CPTED implementation or evidence of its effectiveness. The majority of literature available that discusses a Second Generation approach (Ekblom 2011b; Reynald 2010; Landman 2009; Cozens et al 2005;) only demonstrates the need for a social approach and proposes Second-generation CPTED as a potential resolution. From the evidence available, this idea contains no clear definition, aim, or theoretical framework. Without this it fails to represent a clear crime prevention strategy without practical direction. The principles outlined by Saville and Cleveland (1997) are just a reflection of modern day community safety efforts in Canada and the USA but bare little relevance to First Generation CPTED or even environmental design.

Published literature and case studies on Second Generation CPTED are extremely scarce, making it difficult to reach a solid conclusion about its conceptual rigour and practical effectiveness. From the literature reviewed in this thesis (see Saville and Cleveland 1997; Brassard 2003; DeKeseredy et al 2009), it is clear that a lucid framework is absent, leaving the strategy without definition or definitive theory. The fact that Second-generation CPTED contains so little information but was promoted in 1997, in itself causes concern over its effectiveness as a crime prevention strategy, due to little development since it was put forward. Second Generation CPTED indicates an aim of increasing community cohesion, by putting community based initiatives in place to help communities adapt to First Generation CPTED design and sustain its intended use. It should however become a pre-requirement of First Generation CPTED and a tool for measuring crime risk or creating the foundations for an interactive and engaging community needed to sustain the operational requirements of CPTED (ownership, territoriality, guardianship etc.).

The debate about social conditions has remained fairly consistent throughout CPTED literature even beyond the introduction of Second-generation CPTED and is still a recognised problem in more recent publications. Desyllas et al (2003) confirmed that natural surveillance capabilities are

dependent on a range of cultural and class distinctions. Reynald (2011) argues that guardianship is the ultimate goal of CPTED and that in order for place based crime prevention to be successful and truly sustainable, active guardianship must take place. She also stresses that active guardianship is dependent on social context and that certain social conditions may hinder the willingness to intervene. Within the remit of social context and community engagement, CPTED has also been criticised for being top down in its approach (see Kelly et al 2005; Grohe 2011); particularly following the introduction of the Secured by Design (SBD) initiative in 1989 in England and its later integration into the legislative planning frameworks. CPTED based initiatives which are top down in their approach have significant risk of being unsustainable since community involvement is vital to ensure that a positively functioning environment is either created or maintained.

A thorough review of the available literature on Second Generation CPTED confirms that it does not have the theoretical or practical rigor to be labelled as a crime prevention initiative, nor does it have any solid relationship to First Generation in terms of practical application or theoretical alignment. It is upon this basis that the decision was made to disregard Second Generation CPTED as defined by Saville and Cleaveland, from any further analysis in this PhD. A major research gap is therefore confirmed in that the proposed Second Generation CPTED has been ineffective at providing suitable guidance for analysing the social fabric of communities in order to ensure more sustainable crime reduction effects. The exclusion of Second Generation CPTED therefore reinforces the need for further theoretical and empirical analysis towards the development of a Third Generation approach, so that CPTED initiatives can be bottom up and prescriptive to the environment in which they are applied, whilst maintaining strong theoretical and practical relevance to the First Generation approach.

It is upon the basis of the reviewed literature in section 2.3 that this thesis questions if a broader understanding of social context can be developed within the remit of CPTED to create a more integrated, prescriptive and socially sustainable preventative approach.

2.2.4: Legislative developments

Legislative developments are considered important when exploring the history and development of the CPTED concept over the past five decades. Legislation enforces a standard of practice and in the case of an inter-disciplinary approach such as CPTED, legislation is essential for engagement across different professional disciplines. The UK has witnessed the most significant legislative developments in terms of incorporating crime prevention into planning practice and will therefore be discussed in some depth due to its unique position of best practice. An introduction to the planning process and legislative developments of Trinidad and Wales will also be discussed to evidence the inconsistency of planning practices across different contexts and the important need for a universal framework for best practice.

Towards the end of the 1990's and early 2000's there were substantial legislative developments which impacted the way in which crime prevention was considered by local authorities. These developments are considered by the researcher to have been a catalyst for CPTED coming into mainstream planning in the UK through the accreditation scheme of Secured by Design. It is also believed by the researcher that the legislative developments had a substantial impact on subsequent academic debates which emerged over the following decades, hence their importance in this review.

SBD is owned by the Association of Chief Police Officers (ACPO) and supported by the Home Officeⁱ. The scheme was one of the first multi-agency approaches which required intervention from a variety of agencies such as architects, the police and local authority planning departments. The SBD initiative sets out standards for compliance which were developed in collaboration with the then Department of Transport, Local Government and the Regions. SBD was developed largely upon the CPTED principles and comprises Physical Security, Surveillance, Access and Egress, Territoriality and Management and Maintenance. Pascoe and Topping (1997:1) highlighted that SBD was introduced with the intention of reducing crime through encouraging those involved in the construction field to meet certain specified criteria with regards to housing design and neighbourhood layout. Standards are related to door and window quality, access into buildings and dwelling

boundaries, lighting, and the manipulation of neighbourhood design to maximise surveillance and increase territoriality.

SBD requires consultation with police Architectural Liaison Officers (ALO's) at the early stages of a planning application. ALOs then award or refuse SBD accreditation on the basis of SBD standards. If the application meets the standards of SBD, the development will be awarded SBD certification which can be used by the developer as a marketing or selling point. Engagement with ALO's in most parts of the UK is voluntary but there are several financial benefits for developers to gain SBD accreditation due to its recognised flagship and association with ACPO. Whilst SBD has received considerable government support, it is not without its criticisms. Jon Brown, an ALO from South Wales Police expressed some personal concerns about the initiative and indicated that its flaws cause tremendous difficulties in applying the principles in practice. His concerns were specifically around the lack of training for ALO staff and the inadequate knowledgebase disseminated in the field. These views were expressed in his 1999 Msc thesis which is one of the first evaluations of the SBD initiative. He expressed that there is a *"lack of linkage between the practice of SBD and basic criminology, research skills and knowledge of effectiveness amongst specialists such as ALO's and the police service"* (1999:66). In 2015 Brown also commented that more rigorous training and academic attainment is needed to ensure that ALO practitioners understand the broader theory of crime and criminal motivation and its relationship to environmental design (Personal Communication, March 2015). Brown indicated that the SBD initiative has been removed from its conceptual roots and now perhaps adopts a one-size-fits-all-mentality by practitioners with limited understanding of crime or criminal motivation and is based on standards that are rarely understood or appreciated by stakeholders in the field. These concerns are also shared by Everston (2007) who confirmed that *"very few ALOs and planners receive training on Designing out Crime"* (2007:16).

Other concerns have been expressed by Atlas (2002) and Teedon et al (2010) with regard to the lack of evaluation and Gilling (1997) describes SBD as an 'unfocused' initiative. These early criticisms led to a large scale and very influential evaluation to be carried out by Armitage (1999) which occurred some 10 years following the introduction of the initiative. Armitage found lower crime incidence in

both new and refurbished SBD houses with no displacement and a reduction in fear of crime. What was highlighted however was a disconnect between SBD and broader social factors such as offender *Modus Operandi* which were suggested to help highlight vulnerabilities that SBD does not consider.

The introduction of SBD for bringing CPTED principles into mainstream planning came at a convenient time given the paradigm shift from crime prevention to community safety which focused explicitly on partnership working. The early 1990s brought a considerable shift in focus beyond the initial concerns around the statistical and empirical validity of the CPTED concept. Crime prevention became a topical concern for many governments in the latter part of the 1980's due to rising crime rates and difficulties faced by the police in crime control. It became apparent that a wide range of organisations were becoming interested and accustomed to the crime prevention world. However, at this time, only the police had statutory responsibility for crime control until the Home Office Circular of 1984 which advised all local authorities to take some responsibility for crime prevention. Whilst this did not shift legal responsibility, it did urge them to take some responsibility, particularly by forming partnerships with the police, local authorities, social services and local community groups in the development of interagency crime prevention programmes.

Following this shift in focus, the UK Government in 1986 established the Safer Cities programme and subsequently Crime Concern; the main channels for government funding and encouraging private sector engagement respectively. Safer Cities set up the Safe Neighbourhoods Unit (SNU) working in local authority housing estates and encouraging community engagement and control. The early 1990's saw the development of the term 'community safety' to emphasise the shift in focus from traditional prevention methods to community partnerships and multi-agency planning. Such large developments in crime prevention thinking pressured the government to instruct the Home Office to produce a review of crime prevention policy.

The Crime and Disorder Act 1998 was the key legislation in putting crime prevention plans into action. It acted largely on the recommendations from the Morgan Report; specifically, Section 17 which placed a statutory responsibility on a number of public service agencies to consider crime

prevention, including local authorities, which removed prevention responsibility from sole police shoulders. A provision of this responsibility was that local authorities had to develop Crime and Disorder Reduction Partnerships (CDRPs), otherwise more recently known as Community Safety Partnerships, which brought together a number of bodies including probation and public health authorities to work in collaboration with the police. This transition formalised the paradigm shift of crime prevention to community safety which relies entirely on effective partnership working. Section 17 has undergone recent amendments and now places responsibility upon London Fire and Emergency Planning Authority thereby giving planning departments a more formal footing in the enforcement of designing out crime practice in the UK.

These legislative developments in the UK came at a convenient time for CPTED and SBD development which relied largely upon multi-agency stakeholders. With the SBD initiative already established, its recognition and interest developed rapidly in light of the statutory responsibility upon Local Authorities and now also upon the Planning Authority.

Circular 5/94: Planning out Crime (Department of the Environment 1994) was also very influential to this development; it was the first ever planning policy to set out crime prevention as a key responsibility of planning which formed a two-way relationship between criminal justice agencies and the planning field. It placed consultation between ALO's and planning departments on a more formal footing as well as recognising the link between design and crime. Whilst this was influential, Circular 5/94 was later reviewed. Kitchen (2009) believes that this was a result of early conflicts between New Urbanism concepts and SBD principles and that actually "*planners did not take very much notice of Section 17 of the Crime and Disorder Act since they did not see it as part of town and country planning legislation, nor as anything more than a general exhortation*" (2009:330). These issues were also explored by Everson (2007) on a study of ALO's in the East Midlands region of the UK which highlighted that current cross disciplinary practice in designing out crime is limited due to conflicting interests, ignorance of designing out crime issues and a severe lack of training.

The UK is unique in the sense that incorporating crime prevention principles into planning practice is incentivised through the SBD accreditation scheme. Also in light of the more recent legislative developments in the UK, Section 17 places greater responsibility upon planners which should increase the willingness to engage in crime prevention efforts amongst planning professionals. That being said, the issue of conflicting guidance and difficulties in understanding the relationship between crime, behaviour and the built environment still remains. It is argued by the researcher that such legislative amendments may improve the willingness to engage, but it is unlikely to improve the sustainability of CPTED initiatives without adequate guidance, direction and consideration of the broader social context of crime.

In 1999 the Labour Government launched a three-year Crime Reduction Programme with £400 million invested in research led policy development. The aim was to reduce crime, maximise the implementation of cost effective crime reduction activity and improve mainstream knowledge of best practice. Homel et al (2004) considered this to be *“the most ambitious, best resourced and most comprehensive effort driving down crime ever attempted in a Western developed country”* (2004: v). It is without doubt that this investment had a substantial impact on the policies and legislation that were to emerge over the following years.

In 2000, the Urban Policy White Paper (Office of the Deputy Prime Minister 2000) emphasised the importance of designing out crime through the application of philosophies closely associated with an urban design approach called New Urbanism. There were considerable debates about how the planning system should approach this task given that some of the design advice was contradictory to SBD and Designing out Crime principles. Whilst bringing these two concepts together was the intention, Cozens (2008) highlighted that *“New Urbanism must at least consider the evidence relating to crime and the fear of crime in a more systematic manner, thereby balancing more effectively, the diverse issues and needs within the community”* (2008: 440); thereby suggesting that there is still a disconnect between the two in practice. What was important about the White Paper however is that it made two key commitments; the first was to review the DoE Circular 5/94 and second was to make

crime prevention a key objective for planning which may have enhanced engagement from stakeholders in the field.

Following this, 2004 saw Circular 5/94 replaced by *SaferPlaces- The Planning System and Crime Prevention* (Office of the Deputy Prime Minister 2004), which Kitchen (2009) believed to be a significant step forward by making a much closer connection between crime prevention, planning and sustainable development. He also highlighted however that whilst “*it was clearly aware of some of the controversial issues that existed in relation to these matters, it did little to resolve them*” (2009: 331). Kitchen goes on to say “*it may well be unreasonable to expect a government advice to do this when the professional literature of the field offered little by the way of resolution but essentially perpetuated the conflicts*” (2009:331). It is clear that academia has failed to provide a solid knowledgebase for the CPTED field, resulting in poor dissemination and conflicting policy guidance and CPTED never being truly sustainable or embedded firmly in the planning system. That being said, government support was still strong.

The 2004 Planning and Compulsory Purchase Act introduced Design and Access Statements which were required to demonstrate how crime prevention had been considered within the design of a development (Office of the Deputy Prime Minister 2004). This was one of the first steps in ensuring that planning applications had fully considered the impact on crime as an integral part of the design process rather than as an add-on. Kitchen (2009), highlights that “*developers have often struggled with this new requirement in the early schemes*” and that the Commission for Architecture and the Built Environment (CABE) “*have offered very little guidance on how crime prevention can be integrated into basic design approaches*” (2009:336). In 2010, building regulations were amended through the introduction of the Q1- Unauthorised Access document which took effect on 1st October 2015. The new regulations state that doors and windows should be manufactured to a design that has been shown by test to meet the security requirements of British Standards publication PAS 24:2012. PAS 24:2012 is the minimum SBD standard for security and the document thereby ensures that all new windows and doors meet this standard. The Housing Standards Review also took place in early 2015 which aimed to simplify and rationalise the large number of local housing standards with the

intended effect of reducing the burdens housing standards place upon new developments, inclusive of SBD standards. Whilst these developments are likely to reduce any complexities in meeting SBD standards and engagement and consideration of crime prevention through building design is likely to increase, the requirements for crime prevention set within building regulations are security focused and thereby do not overcome arguments relating to broader determinants of crime and the importance of social context which are the foundations of this PhD research.

Crime Impact Statements (CIS) were introduced in 2006 by Greater Manchester Police and Manchester Planning Authority. The CIS process involves identifying, predicting, evaluating and mitigating crime and disorder effects from a development proposal at the pre planning stage. This aims to ensure that crime, disorder and fear are considered before a proposal is finalised. Whilst this is a significant step forward for local context analysis at the pre planning stage and consideration is required as to how new developments will align with the CPTED / SBD principles, the site analysis conducted is limited to analysis of crime rates physical design features. There is minimal consideration given to the wider determinants of crime, fear, and the social fabric of communities, and how these factors may impact upon the use and perception of public spaces. Community engagement in this analysis is key to understand the complexity of the social context and how design and maintenance can be adapted to accommodate site specific conditions.

Building regulations and planning legislation has improved significantly in recent years and has helped to integrate crime prevention principles within mainstream planning. In Wales legislative developments have also advanced; the Welsh Government Technical Advice note 12 was updated to strengthen support for designing out crime and SBD was included in the Welsh Housing Quality standards. Building regulations also went under review and Police were arguing for PAS 24 standards on all external doors and ground floor windows to be included. Similar changes were also introduced in Scotland.

In other countries, legislation to support the integration of crime prevention principles into planning practice have not been as forthcoming, particularly in less developed countries. In Trinidad and

Tobago, the legal framework for Town and Country Planning derives from the British system. Much of the wording in the Town and Country Planning Act (1969) replicates the UK Town and Country Planning Act (1947). Both systems have evolved quite differently and the Trinidad Town and Country Planning Act (1969) despite its age, continues to provide the statutory framework for the national planning system.

The planning process in Trinidad requires permission to be obtained from the Town and Country Planning Division (TCPD) of the Ministry of Planning and Sustainable Development before any development of land is undertaken. The requirements of planning are to ensure that an environment is:

- Aesthetically pleasing
- Has adequate services to communities
- Is compatible among various land uses
- Has privacy between buildings
- Is convenient and safe for pedestrians and vehicles
- Has fire protection, natural light and ventilation to all buildings
- Has recreational open space (Government of the Republic of Trinidad and Tobago 2015)

The objectives of TCPD and the Town and Country Planning Act have no reference to crime, safety or security in the built environment other than that developments must be safe and convenient for pedestrians and vehicles, however there is no standard or process to regulate this. For planning applications, TCPD advise use of the Guide to developer's manual (Ministry of Planning and Sustainable Development 1988) which sets out planning policy and standards to be considered when applying for planning permission. Nowhere in this guidance is there any formal reference to crime risk or public safety or consideration of the impact a proposed development may have on crime and the use of public space. As is the case in many countries, including the UK (Moss, 2001), the current structure of the Ministry of Planning and Sustainable Development also undermines and devalues the role of the planner whose role is essentially to regulate development control. In Trinidad, the Advisory Town Planning Panel (ATTP) was set up for planning applicants to object to a refused

planning application, the decision of which can be overturned and subsequently authorised by the Minister. This opens a window for corruption and risks crime prevention planning becoming a task of avoidance rather than compliance unless more rigorous processes are adhered to. Such variation in planning legislation reinforces the need for a holistic framework. Guidance is so diverse and arbitrary within different contexts and political constitutions that it is often left out of the planning process, implemented to the minimum requirement or adopted without a full appreciation of the relationship between crime and design.

The geographic focus on the UK, Wales and Trinidad in the discussion of legislative developments were considered important for the following reasons. Each of the three areas provides varied political and socio economic contexts which have similar planning systems but different secondary legislation, standards and regulations. This reinforces the point that the requirements within the planning process are varied within different contexts and also reinforces the variation of CPTED implementation as a result of legislative developments. These three areas are also chosen for this reason, and others, to be the geographic focus for empirical work carried out in latter stages of the PhD. It was therefore considered important that the planning context and legislation from which it derives was introduced early in the thesis to set the context for the remaining parts of the research.

When crime prevention became an integral part of planning legislation and building control in the UK, some historical murmurs from the early 70's about future risk to collaboration and transferability in built environment practice were unearthed (See Bickmen et al 1978; Kaplan et al 1977). These concerns were largely ignored at the time due to broader issues relating to the empirical soundness and poor evidence base supporting the concept. Whilst attempts have been made to more formally integrate crime prevention into planning legislation and building control, the issue still remains that the analysis of social context is lacking in CPTED planning, and that without suitable guidance to do so, planners will to some extent remain disengaged.

Section 2.2.4 has discussed the development of planning legislation in the UK and other contexts and has evidenced the variation of building regulation and control. Not only does this highlight significant

inconsistencies in practice, but it reinforces the need for CPTED to be developed on a holistic basis so that best practice can be replicated worldwide.

2.2.5: Multi-Disciplinary Collaboration

As mentioned earlier, the initial LEAA CPTED demonstration evaluation reports highlighted issues relating to multi-disciplinary and multi-agency collaboration which were highlighted as contingencies for CPTED failure in later years. Soon after the first evaluation report (See Kaplan et al 1978) was published however, Dingemans (1978) confirmed their concerns when he applied Newman's principles to a sample of contemporary suburban townhouses to evaluate the level of implementation in modern day construction. The results of his study caused the author to question the transferability of research into built environment trades and professions, *"Also missing are guidelines that establish crime prevention standards for housing developments as a whole"* (1978:8). This was believed to significantly impact their ability to create effective crime prevention strategies. Whilst developments have been made in terms of building standards and planning legislation since CPTED was initiated, there is still little in the way of formal guidance for crime prevention which is consistent universally or flexible to different social context. It is argued in this thesis that consistency in crime prevention guidance is important to minimise the risk of developers or planners with little or no knowledge of crime prevention adopting crime prevention principles that have been developed based on the context of another area or country. This is arguably the case which will be evidenced throughout this PhD.

Recognition of this issue so early on in the development of the CPTED principles speaks volumes for the failure to provide a sound knowledgebase for practical guidance in the decades to follow. It was also inevitable that rectifying this knowledgebase would be a difficult task; a knowledgebase which Rubenstein et al (1980) described as *"a rat's nest of intertwining hypotheses"* (1980:8).

Whilst there were some cautions early on about the lack of effective communication and collaboration between CPTED stakeholders, this concern did not really take hold until CPTED principles became more operationalised through mediums such as SBD and Safer Cities programmes together with the shift in responsibility of crime prevention to agencies with little knowledge or experience of crime

and criminal motivation. Schneider (2004) pointed out that *“there is little convincing evidence that CPTED principles are embedded in the consciousness of local planners or are on the agendas of local planning agencies, much less being implemented by them”* (2004:241). This reinforces the idea that even though crime prevention consideration is compulsory in the UK, across disciplines there is still a general sense of avoidance. Cozens (2002) reinforced this disconnect between disciplines in his study which considered the standardisation of CPTED principles following the introduction of SBD. He argued that

“It is surely time for town planners, surveyors, and criminologists, amongst others, to engage in open, purposeful debate and to develop a deeper series of insights into the criminogenic capacity of different component parts of the built environment. Such insights might provide a practical framework with which to move forward and craft residential environments which are truly sustainable by a set of wide-ranging and useful criteria” (2002:130)

This suggests a lack of engagement between disciplines which is hindering effective CPTED development and integration into the planning field within which it should be embedded. It seems that such collaboration difficulties have become the foundation of poor guidance in this field which further exacerbates the reluctance to engage. Poor CPTED guidance is a common problem which is likely to be the result of a concept which has been significantly under researched in its early development and subsequently impacts on the willingness to engage. Linden (1990) argued that *“there is little systematic guidance for deciding which specific approach is best”* (1990: v) which offers little support in a field in which crime prevention is not within its general remit. This is also supported by Schneider and Percy (1996) who recommended that *“specific standards need to be laid down rather than generalised descriptions of the elements involved”* (1996:24). Ekblom (1997) later confirmed that *“much of the available [guidance] material is limited in scope and frequently offers no more than a string of loosely-connected ideas uninformed by theory”* (1997:249); this is the likely cause of such inconsistent or absent guidance in practice at that time. It was upon this basis that any proposed re-developments of the CPTED concept in this thesis must ensure that they are theoretically grounded, holistic and transferable to across disciplines.

Concerns regarding the effectiveness of multi-agency working and the absence of informative guidelines/standards for CPTED are prominent in the early development of the concept. Whilst legislative developments have advanced since then, there is still significant variation of standards and guidelines for crime prevention which therefore fail to direct planning professionals towards the development of context specific approaches. Concerns about the state of multi-agency working as a result of this are also evident in more recent years (see Soomeren 2000; Schneider 2002; Armitage 2004, 2006; Parnaby 2006; Armitage 2007). Kitchen (2010) suggests that advancements in planning legislation have not had much effect in practice on planning decisions.

2.2.6: Communication and Transferability of CPTED Knowledge

Policy development in the 1990's and early 2000's was revolutionary for CPTED due to the strong focus on multi-agency working and CPTED practice diverging across disciplines. This brought about a strong recognition of the inadequacies of the CPTED knowledgebase which was affecting the understanding and application of the concept in practice.

Jeffery himself also picked up on this notion. His 1999 presentation at the 4th Annual International CPTED Association Conference in Calgary suggested the cause of these problems by arguing that “*a coherent theoretical model of CPTED never existed*” (1999:1). This suggests that the CPTED which has come to exist has been loosely developed by an amalgamation of interpretations and experiences rather than robust theoretical development. The result of this, suggested by Ekblom (1997) is that “*the working knowledge of prevention that exists is couched in a tangle of inconsistent and loosely-defined terms and concepts which render it difficult for designers to access, to think about and to apply*” (1997:249). It is therefore inevitable that such inconsistencies in the knowledgebase of the concept will have a substantial negative impact on the ability to translate CPTED principles into a cross-disciplinary professional environment.

Paul Van Soomeren is another pioneering academic who has explored the issue of CPTED guidance and dissemination of knowledge. His 2000 contribution to the conference on the relationship between the physical environment and crime reduction and prevention in Szeziczin, Poland, reinforced the

ongoing problems with regards to the poor dissemination of knowledge in the ‘designing out crime’ field, and across different geographic contexts. Soomeren (2009) suggests that it is *"not only local and regional authorities that are lacking information. The same goes for all other stakeholder agencies like the police, urban planners, architects, insurers and residents."* (2000:9). A European standard is proposed to overcome such issues and to regulate crime prevention advice in the built environment, also designed to structure inter agency and cross disciplinary stakeholder collaboration. This standard was later issued by the European Committee for Standardisation (CEN), known as CEN TR 14383-3 Prevention of Crime by Urban Planning. It is however not compulsory, which leaves scope for a lack of engagement and existing struggles of multi-disciplinary collaboration to remain.

In this respect, Armitage (2007) raises a very valid point. She argues that *"rather than accepting and implementing the findings of available evidence, the ensuing years have seen an abundance of confusing and contradictory policy and guidance which have diverted practitioners and policy maker's attention from the immediate task of reducing crime"* (2007:82). It is apparent that due to the unstructured historic development of CPTED since the early 1970's, and the operationalisation of the concept before it was fully researched, the field of CPTED is now faced with *"contradictory guidance which has led to frustration, conflict and confusion"* (Armitage 2006:14). This has left scope for conflicting interpretations and applications of the concept whilst practitioners are shouting out for new policies and guidance to rectify this chaos. Taylor & Gottfredson (1986) also confirm that it was clear that CPTED and its objectives had been misinterpreted by planners. The result of such unstructured development has resulted in an assortment of conflicting policies, standards and guidance material with very little theoretical justification and little relevant practical guidance which is often contradictory in both advice and demands. It is therefore easy to understand the difficulties currently faced in multi-disciplinary collaboration if the academics and practitioners in the originating field even fail to get it right.

From the 1990s onwards, there has been a consistent focus on the communication and transferability of the concept and collaboration difficulties in a multi-disciplinary environment; the causes and consequences of which are wide ranging. With regards to the knowledgebase disseminated through

research and policy development, this has serious potentially negative implications. Eklom (2009) argues that *“the scope of CPTED remains unclear, leaving it prone to meaning different things to different agencies and different professional disciplines, and to changes in fashion and drifts of meaning”* (2009:3). This issue is potentially damaging for effective collaboration between agencies which are already faced with conflicting priorities and agendas.

More generally, CPTED itself has inherent limitations, particularly regarding the definition, disciplinary position, and the inherent conflict within and between the CPTED components. The definition of CPTED is often referred to as

The proper design and effective use of the built environment, that can lead to a reduction in the fear and incidence of crime and an improvement in the quality of life. ...The goal of CPTED is to reduce opportunities for crime that may be inherent in the design of structures or in the design of neighbourhoods (Crowe 2000: 46).

Eklom (2012) argues that this definition is inconsistent, specifically in that the scope of CPTED remains unclear which means that it can mean different things to different agencies and different professional disciplines. This definition also focuses specifically on opportunity which neglects situational precipitators or broader social influences.

The disciplinary position of CPTED remains unclear. Whilst some academics argue this to be a problem in that it risk becoming isolated from mainstream practice, it is argued in this thesis that CPTED should not be aligned to one particular discipline as it relies on contribution from stakeholders across a range of disciplines. What is important however is to ensure that CPTED becomes an integrated part of all major disciplines that it aligns with in practice such as architecture, planning, crime prevention, criminology, sociology and the like.

There are also problems within the individual components of the CPTED concept. Territorial behaviour is context specific (Cozens et al 2005; Eklom 2012, Eklom et al 2013) and the relationship between territoriality and property crime is found to be incongruous, particularly regarding measurement and operationalisation of dimensions such as ownership, physical/symbolic

barriers (Reynald 2009). It is argued in this PhD that territoriality is however unique, and because of the inherent conflict associated with the operationalisation of the concept and its inter-relationship to other concepts, it should be subject to some extensive revision of its position within the CPTED framework.

Territoriality is also controversial depending on the context of the environment due to the risk of creating 'Offensible space' rather than defensible space. Depending on the context in question, it is possible without a thorough analysis of the social context of the environment, for CPTED to increase territoriality and ownership amongst criminal groups. Atlas (1991) argued that "*Criminals are using access control, surveillance, and territorial strategies to obstruct law enforcement and insure the security of their illegal businesses*" (1991:63); again reinforcing the need for detailed analysis of the social context of the place.

Surveillance as a concept within the CPTED framework is also found to be controversial, particularly relating to aspects of privacy and autonomy (Lyon 2001; McArthur 2001; Fairweather 1999; Palm 2007, 2009). There are also concerns raised about the impact of surveillance on dignity (Stoddart 2002), identity (Behrens 2013) and freedom of movement (Palm 2013). There are also contradictions between natural surveillance in the form of sightlines and obstructions caused by access control and physical barriers (Mawby 1977; Reynald 2009).

Positive reinforcement components (i.e. image management/maintenance) are controversial given its underlying theoretical foundations of Broken Windows Theory. Whilst plausible, this theory has only received partial support from academic research (Harcourt and Ludwig 2006). Whilst there is limited evidence to support the premise that removal of incivilities prevents crime from escalating into more serious crime, there is evidence to suggest that that incivilities impact upon fear which in turn affects the way in which people use public spaces, therefore creating opportunity for offending in abandoned streets as will be evidenced in this thesis.

Access control principles such as defining between public and private space and target hardening efforts have also sparked some critical debates. Not only are these principles found to conflict with

surveillance efforts but they are argued to be architecturally deterministic with an overt focus on fortification. This in turn can lead to social isolation, increased fear and segregation within communities if social conditions are not accounted for (Geason & Wilson 1989; Dillon 1994; Landman & Lieberman 2005).

Whilst there are inherent problems highlighted within the CPTED framework, it is argued that this is primarily the result of its unstructured development and isolation from theory of crime and criminal motivation. This has resulted in a myriad of different interpretations of the interconnected principles as well as the concept overall with little structured or consistent guidance of best practice. The theory underlying the CPTED concept has a strong evidence base as discussed in other sections of this PhD (see Section 2.2.1 of this review). It is upon this basis that the researcher argues that CPTED does have significant potential to have positive and long term impact upon opportunities for crime and criminal motivation in the built environment IF the complexity of social conditions are accounted for and guidance is informative and directive to the multi-disciplinary practices upon which CPTED depends on.

2.2.7: Stakeholder engagement

CPTED is reliant on an invested interest by multi-disciplinary and multi-agency stakeholders; however, its operationalisation is also reliant on active leadership from within the planning and urban design field as a medium through which it is implemented. Crime prevention is a fairly new phenomenon to planning and urban design professions and one which is not statutory to education in this field. It is therefore inevitable that consideration of CPTED principles within the remit of planning and urban design will be somewhat uncomfortable for professionals in this field. Whilst political support has been stable, the history and development of CPTED which has been explored in this review does not provide much assurance for the professional to invest time and resources to incorporating CPTED principles into a development, especially when their priorities lay elsewhere. Conflicting priorities between stakeholders has been identified as a consistent issue amongst researchers in the field, often this has been a result of miss interpretations of the CPTED principles

which have devalued their importance in planning practice and other times it has been a result of larger and more financially rewarding demands for the developer. Crowe (2000) in his very influential book *Crime Prevention Through Environmental Design*, recognised this conflict early on. He argued that “*the specialist... can often be swayed by misperceptions or by the conflicting demands of his professional competition*” (2000:30). It is therefore vital that as experts in the field of crime prevention, academics must ensure that an adequate body of information is disseminated so that the importance and potentially damaging impacts of crime can be recognised and appreciated within the built environment field. Topping and Pascoe (2000) also recognised this issue in their evaluation of SBD practice when police advice was rejected by planners during a pre planning SBD application.

The issue of compliance is still an ongoing problem and one which will likely be existent in planning systems in other parts of the world. Section 17 of the Crime and Disorder Act and Circular 5/94 encourage a joint responsibility between agencies in the fight against crime. However, with regards to designing out crime practice, Police forces are in a constant battle against planning fields due to the lack of regulation and enforcement procedures for crime prevention within the planning system. Moss (2001) reports on the difference in priorities with regards to developments, and debates that

“The interruption of Section 17 by the Planning Inspectorate has essentially created the bizarre situation where local authorities make decisions based on the crime and disorder criteria they have to consider. If developers (who have their own agendas) disagree with these decisions, then it goes to the Planning Inspectorate, who reverses these decisions because they say that the criteria are irrelevant” (2001:48)

Moss then goes on to suggest that the decision of the Inspectorate is based upon his/her material weighting which not only undervalues the guidance of the Crime and Disorder Act, but also that of the police. Olasky (2004) proposes an alternative method rather than forcing compliance through legislation. He suggests that

“What is needed is not merely more government involvement, but involvement that encourages experimentation, creativity, and good design... smarter government action, action that

harnesses the creativity of architects within a dynamic system of experimentation and continual learning” (2004:357).

It is therefore important that CPTED is fully understood and the mutual benefits and links between that and the built environment field are positively promoted and interesting to all stakeholders.

The basis of Olasky’s suggestion is his opinion that although government support of CPTED is well meaning, *“the resulting efforts are often poorly conceived, under-funded and haphazardly implemented, delaying widespread development of CPTED and potentially causing as much harm as good”* (2004:330). The impact of this is that CPTED stakeholders; such as architects, planners, urban designers and the like, will be reluctant to engage in an initiative that is not structurally or legislatively sound; this may result in miss interpretations and potentially criminogenic design regardless of what policies or legislation encourages their involvement.

Poor engagement of planning professionals appears to be a consistent problematic issue in CPTED literature and is still found to be problematic in more recent years (See Kitchen 2010) and something which is necessary for further exploration in this thesis.

2.2.8: Sustainability

With reference to policy developments over the past decade, there has also been an increasing shift in focus towards sustainable development practice and the National Planning Policy Framework (Communities and Local Government 2012) sets out that *“sustainable development is the basis of every plan”* (2012: i). Sustainability has become a topical focus for the planning industry over the past 2 decades, particularly since the Rio Earth Summit in 1992. The notion of Sustainability emerged in 1983 when the UN set up the World Commission on Environment and Development. The commission was led by Gro Harlem Brundtland who put forward the concept of Sustainable Development which was first defined as *“development that meets the needs of the present without compromising the ability of future generations to meet their own needs”* (Brundtland et al 1987). After considering the Brundtland Report, the UN General Assembly called for the United Nations Conference on Environment and Development (UNCED) in 1992, otherwise known as the Rio Earth Summit which

was a cornerstone in the shift in focus for CPTED debates. The conference transformed attitudes and behaviours in light of the problems that were faced at that time, particularly around poverty and excessive consumption by affluent populations, and the subsequent stress caused on the environment. Local Agenda 21 (United Nations 1992) is an action agenda which emerged from the Rio Earth Summit for all UN countries, multilateral organisations and individual countries around the world.

Sustainability and the impact of the physical and social environment on crime (and vice versa) became a vital focus for CPTED development following LA21. Sustainable development is now enshrined in law through the requirement of LA21 policies which sets out the requirement for certain developments to conduct Environmental Impact Assessments (EIA). Cozens (2002) however, highlighted that “*Environmental Impact Assessments do not include the potential criminogenic impact of any such developments*” and that “*CPTED remains almost exclusively an optional consideration for planners and urban designers*” (2002:135). The link between crime and sustainability is significantly undervalued within the field of urban planning. Since the Rio Earth Summit and LA21, sustainability has become a central focus in the field of planning and more so in recent years due to the public and professional interest. It has become a ‘buzzword’ in many aspects from marketing to policy development, yet Poulsen (2013) believes that “*amid the rush to embrace sustainability, the definition of what it means to be sustainable has been lost*” (2013:6). Poulsen argued that since the Brundtland commission’s definition of sustainable development was publicised, “*it has undergone little meaningful change*” (2013:6). The definition proposed by Brundtland as mentioned earlier has undergone considerable scrutiny for focusing overtly on environmental concerns at the expense of wider social issues (see Poulsen 2013). It is therefore important to recognise that crime and its inherent social and physical drivers are a necessary and vital component in the development of truly sustainable communities.

Crime has been and still is considerably undervalued within the field of sustainable development and planning in general. It is difficult to argue that crime and fear of crime have no impact on communities, but many people do fail to understand and appreciate the serious and long term impacts

that crime and fear of crime has on the longevity of communities socially and physically; whether societal, emotional, economic or environmental in nature (Poulsen 2013).

Economic costs are self-explanatory in that in areas with high criminal victimisation, property values are likely to reduce, neighbourhoods will decline and there is a likely need for investment in urban renewal or retrofitting existing buildings and infrastructure; not to mention the personal individual cost of economic crime and expense to the tax payer for criminal apprehension and prosecution.

An extremely harmful impact of crime is on residential mobility which often results in residential instability as demonstrated by Park (1915) and Sampson and Groves (1989). Neighbourhoods with residential instability are also known to destabilise due to residents moving out of the area, often due to fear or perception of crime. Community decline represents a community which is unsustainable. According to Poulsen (2013), *“they no longer succeed economically, socially and environmentally. Nor are they places where people feel safe and secure-where crime and disorder or the fear of crime doesn’t undermine the quality of life or community cohesion”* (2013:49).

Social and emotional costs of crime are perhaps the least recognised impacts on the sustainability of a community; this however has a profound impact on the behaviour of people and the way in which they use public space. Gamman and Thorpe (2009) identified that crime and fear have serious impacts on liability, social equality, sustainability and social cohesion. Areas high in crime may become socially isolated; exacerbated by poor design responses, increased fortification and target hardening methods which may ignore the importance of users for sustainable communities and increase fear through poor design.

Environmental costs of crime are often related to carbon costs of retrofitting and renewing failed neighbourhoods or areas in social decline (Poulsen 2013). A sustainable community will be able to maintain itself over long periods of time and will therefore avoid unnecessary financial costs of extensive renewal or demolition.

Sustainability is a very broad and complex phenomenon and one which should not be considered lightly in the context of this PhD. Sustainable communities are very clearly related to CPTED and

crime prevention in general, as discussed in each of the different elements above. However, ‘social sustainability’ is recognised as an element of sustainable communities that is heavily dependent upon effective CPTED initiatives. Sustainable CPTED initiatives are also heavily dependent upon a community that is socially sustainable to ensure that the desired behavioural outcomes are achieved. It is argued that the social sustainability of communities and the impact that a socially *unsustainable* community can have upon perception and use of public space should be an important consideration for the sustainability of CPTED planning. For the purpose of this PhD, social sustainability is defined by the sustainability of a community in terms of its social constructs, longevity of the physical and social fabric and the ability for communities to maintain a positively functioning environment with a controlled rate of crime.

Despite the very obvious and damaging impacts of crime on the sustainability of a community, very few planners consider crime prevention to be part of the development of socially sustainable communities. Cozens (2002) highlighted that crime and its relationship to the built environment has been “consistently ignored” within the conceptual framework of sustainability. In 2008 Cozens argued that

“many sustainability frameworks are underpinned by notions of social sustainability: equity, opportunity, quality of life and participation, but few, if any, have developed sophisticated operational strategies to measure or combat crime and the fear of crime” (2008: 274).

This indicates that there are yet to see developments towards an integrated model for social sustainability to measure crime and fear. The notion of sustainable development and its inherent relationship with crime has been a concern of many. Armitage and Munchuk (2009) highlighted that *“the sustainability issue has become too narrowly focused”* and that *“crime and the fear of crime are integral elements of the lack of sustainability, yet explicit reference to their reduction is rarely found”* (2009:309). This is a significant issue in the field of planning since ignoring crime issues may potentially undermine all sustainable development efforts if crime is prevalent. Marzabali et al (2011)

confirm that “*safety and security should be considered as a prerequisite towards achieving sustainable development*” (2011:167).

Since the matter of sustainable development has come to the fore in the last two decades, the existing issue of social context has been reinforced within the CPTED field. Sustainable development practice relies on a thorough understanding of the physical and social processes and functions of the local environment to ensure that sustainability enhancing strategies are context specific and meet the needs of society without compromising the future generations. Cozens (2008) highlighted that “*relying on officially derived crime statistics for the purpose of measuring sustainability could undermine such a protocol, which should arguably include indicators for fear of crime and the perceptions of different user groups within the community*”(2008:280). This indicates a significant gap in research and practice in that there is currently no formal strategy in place to consider crime within the remit of sustainability, and vice versa, beyond official crime statistics.

Cozens persistently highlights that there is a disconnect between crime prevention and sustainability and that CPTED is not formally integrated within a framework for sustainable development. It seems as though a large part of this problem is to do with the fact that there is no formal process for integrating CPTED principles into sustainable development practice and there is limited understanding of the contextual links between crime prevention and sustainability, or perhaps how CPTED or crime and its related components can be used to analyse the sustainability of a community. Cozens (2008) highlighted that there is limited information concerning crime and fear as indicators of sustainability and how these may be defined, measured, analysed and operationalised. Glasson & Cozens (2010) make the first step forward in establishing this link, they highlight the importance of social sustainability in crime prevention and argue that Impact Assessments provide a good foundation for considering crime risk in an environment but they accept that there is substantial work yet to be done to ensure that these concepts synthesise with sustainability. They argue that “*the planning profession has a significant role to play in the pursuit of sustainable development and crime and the fear of crime are clearly significant but poorly measured indicators for sustainability*”.

Findings of this review confirm that there is considerable need to bridge together the two concepts so

that they work together in a united effort to achieve such explicitly common goals. Impact assessments have been part of planning in the UK since the National Environmental Policy Act came into force in 1969 however almost 5 decades of research and development in this field has still failed to recognise the serious and negative impacts that planning and urban design can have on crime and subsequent sustainability.

Literature explored in section 2.2.8 of this review has led to some very important aspects to be explored in this thesis. A link between CPTED and sustainability is evident, yet further, in-depth analysis is required to explore how this relationship can be formalised and the positive implications it may have.

2.3: Conclusion

The latter part of CPTED development from the 1990's-present has consistently focused on the issue of communication and transferability, multi-agency collaboration, sustainability and social context which are all inherently linked. The idea of crime and its relationship to the built and natural environment got off to an unsteady start since crime rates were rising and society was in need of a quick fix. When CPTED was first initiated by C Ray Jeffery, his intentions were solely to encourage deeper thinking about how the environment, in a very general sense of the word, can impact the human brain and subsequent behaviour. Jeffery's intention was never to provide a comprehensive framework for environmental design and his conceptual thinking was more in line with the social and biological environment rather than the physical.

Newman's defensible space thesis which offered prescriptive design solutions to crime opportunities was put forward at the same time and was inevitably influential to government due to the initial short term crime reduction benefits it proposed. This was a crucial point for the development of CPTED since it was quickly picked up by the US government and operationalised without fully reliable evidence or theoretical foundations. Nevertheless, the initial CPTED demonstrations by the LEAA did provide substantial practical feedback which highlighted a number of issues for successful CPTED

implementation (see Bell & Young 1978; Pesce et al 1978; Bickman et al 1978; Wiles et al 1978; Kohn et al 1978), many of which however, still remain today.

The issues which have been reported in this review highlight the serious and potentially damaging impacts on CPTED. Whilst there has been evidence of its success, there still remains to be significant issues in the consistency of the CPTED knowledgebase both in terms of the reliability of its evidence base and its transferability into planning practice. The result of this seems to have implications on the interpretation of CPTED principles by built environment professions and due to the lack of consistent guidance and regulatory policies, CPTED becomes vulnerable to confusion and conflict of priorities, goals and the potential for criminogenic designs due to a lack of knowledge in the field.

It is without doubt that the CPTED knowledgebase has become confusing and often contradictory; however, there is also a substantial knowledge gap in its ability to fundamentally integrate CPTED principles into the planning process or within planning policy and guidance. It is assumed through a thorough review and synthesis of literature explored in this field that a substantial part of the disconnect is due to the lack of social context of both crime, its impact on human behaviour, the way in which humans connect with public space, and the impact that many characteristics of planning and sustainable development have on crime and the use of the environment. There is still considerable disconnect between built environment professions and wider environmental criminology and crime science disciplines which hinders the development of holistic strategies which are firmly and lawfully embedded in the planning process. That being said, there is also a lack of suggestions as to how such a holistic approach could be developed due to the lack of knowledge on the wider social context of CPTED, crime and criminal motivation and its relationship to planning and urban design. Conclusions drawn from this review therefore confirm the need for an updated approach to CPTED which takes into consideration these issues.

Whilst there have been considerable amounts of research conducted across Europe, CPTED has in more recent years emerged in countries outside the Western World from which it originated. Studies by Ekblom et al 2011 explored CPTED in the United Arab Emirates, Marzballi et al (2011) explored

CPTED in Iran, Thorpe & Gammon (2013) applied CPTED in South Korea with a specific focus on community engagement and social context; and more recently Owusu & Wrigley-Asante (2015) applied CPTED in Ghana. All studies show the importance of social context when applying crime prevention to the built environment.

In order for CPTED to take a formal footing in planning fields and to be recognised as a vital component of sustainable development research and practice, further exploration of CPTED in different contexts is needed in order to develop deeper and more integrated conceptual guidance on the impact of sustainable urban development on crime and vice versa.

It is therefore unequivocal that the focus of this thesis must be to explore the criticisms which query the transferability of the CPTED concept both in terms of its language and in terms of the dissemination to and integration of CPTED principles to establish a formal relationship between the mutual goals of crime prevention and the broader remit of sustainable development. The current status of CPTED today still demonstrates the need for further development. Whilst research has been ongoing there is still considerable inconsistency in CPTED guidance, particularly with regard to framework variations, terminology and definitions (Eckblom 2011b). Interpretations of the CPTED goals are varied and it is often misconceived by professionals within the built environment field; such misconceptions have noticeably impacted both engagement and policy development within the field of planning. Conflicting priorities are most likely a result of a lack of understanding and an inadequate dissemination of knowledge for professionals to fully appreciate the positive impacts CPTED can bring to broader and often mutual planning goals, such as components of sustainable development. Whilst planning and urban design is often top down in its approach, a more substantial appreciation of how the environment impacts upon people's perception and subsequent behaviour would be a good starting point for any contextual development or social engagement in the CPTED field. It is therefore vital for CPTED guidance to develop its focus in this area so that it can integrate holistically with planning principles across the world.

In reflection of this literature review, the overall aim of this PhD is to improve and update the CPTED concept by mitigating its underlying problems. The findings from the review have however identified a number of criticisms of CPTED which are all worthy of further exploration. It is however and unrealistic task to address all factors discussed within the remit of this PhD. The research therefore relies upon a further exploratory analysis to provide justification for the factors which will become the focus of this PhD.

The problematic issues highlighted in this review undoubtedly need further investigation for improvement in all aspects of research and practice and the review has essentially concluded that CPTED is a mess. To date there have been no studies which have proactively considered all of the problems that exist in the CPTED field, no evidence of prioritising the problems identified and no provision of prescriptive solutions to mitigate their impact. A research project with poorly defined research questions is very bad practice, and is something which was strongly avoided in this PhD. With this in mind, it was decided that it was unrealistic to set a definitive methodology until the identified problems had been analysed in greater depth and confirm which would be explored further in this PhD. The PhD research therefore relies on an exploratory, evolving methodology which begins with a broad overarching question then gains more focus and clarity as the research progresses.

2.3.1: Research Objectives and Questions

Objective 1: The objective of the early parts of the thesis set out to critically explore the CPTED knowledgebase and analyse the merit of its main criticisms through a robust systematic methodology.

Research Question 1: The research therefore questioned, what are the key criticisms underlying the CPTED concept and which are most pertinent to improve the application of the CPTED concept and for further exploration in this research?

Objective 2: A second research objective could be set to inform the research methodology once the main criticisms had been identified and prioritised. This set out to explore how the problems came to exist and propose measures to mitigate them.

Research Question 2: The second research question therefore asked what is the basis of the main CPTED criticisms and can they be resolved?

Two further and very broad questions which guided the remaining parts of this thesis asked:

- What measures are required to improve the CPTED concept?
- What is the impact of improvements in the field?

The thesis begins with a systematic analysis of the CPTED criticisms to explore the complex networks behind the CPTED criticisms and ensure that the issues highlighted as a focus for this research are justified and unbiased within the CPTED field. Following this analysis which is reported on in Chapter four, the remaining research questions and objectives are provided.

The next chapter of this thesis will report on the broad methodological approach adopted for each section.

Preliminaries

CHAPTER 3: Methodology

This thesis is embedded within the Crime Science philosophy of continuous and rigorous hypothesis development and testing and it also adopts an emergent methodology. Whilst most research involves hypothesis testing, the difference between emergent and non-emergent research approaches is the source of the hypotheses. In most research, hypotheses are drawn from the literature; however, in emergent research the source of the hypotheses are data driven and therefore dependent on data obtained (Dick, 2001). Whilst emergent in nature, this thesis is also grounded in the philosophy of science based upon the cumulative acquisition of knowledge derived from methods of systematic experimentation. The primary objective being a proposed paradigm shift for the way in which CPTED and wider crime prevention philosophies are considered. The structure of this thesis reflects this emergent character and the hypotheses developed for each section subsequently depend upon findings from previous sections. The main body of the thesis is divided into 5 distinct parts (parts A-E) which **analyse** the inherent criticisms of the CPTED concept and bias within them, **develop** solutions to overcome the barriers identified and **test** the impact of such developments.

3.1: Qualitative and quantitative research

This research adopts a mixed method approach which is quantitative in nature but also draws upon qualitative approaches towards the latter part of the research. Qualitative research is primarily exploratory research and is used to develop an understanding of the underlying reasons, opinions, perceptions etc. of a given phenomenon. Qualitative research methods are usually adopted in exploratory research where there is no existing research data on the concept and the appropriate unit of measurement is not certain. Quantitative research is used to assess a problem by generating numerical data. Quantitative methodology can quantify attitudes, behaviours or other defined variables and results are usually generated from a larger population sample. Quantitative research uses

data in order to verify facts and reveal patterns within the research allowing the researcher to test as well as explore.

Earlier parts of the thesis are exploratory in nature but have a very clear indication as to what units will be measured (i.e. number of documents, frequency of key terms), all of which are numerical data. Whilst the analytical process relies upon the researcher's interpretation of discourse within published literature, the data extracted is quantified and patterns are identified within the data extracted from the texts. These approaches are largely quantitative.

Throughout the latter parts of the research, the social world is explored in depth by investigating the perceptions of professionals' experience of using CPTED as well as the senses community participants make of their social and material circumstances, their experiences and their perspectives of crime risk within their community. Fieldwork conducted during this part of the research used a mixed methods approach through the use of focus groups, observations and secondary data collection. The purpose was to provide an in-depth interpretation of the physical and social context of Crime Prevention Through Environmental Design in an attempt to enhance and update the concept.

The perceptions and experiences of participants are explored in several parts of this PhD (see figure 3.1):

- Part A explores perceptions of CPTED within the academic community

This was important for developing a holistic overview of the criticisms or potential barriers expressed by those who both disseminate CPTED knowledge and evaluate its impact. The academic community is considered to be the most suitable source of critical information due to the role of academic research in continuously seeking to improve and develop the world of knowledge and was therefore likely to provide an all-encompassing history of CPTED's strengths and weaknesses.

- Part B analyses the integrity and foundation of the identified criticisms, and the transferability of CPTED knowledge to professional practice.

This was important for confirming that the issues explored in this thesis were securely grounded so that the CPTED concept could be improved and updated based on sound evidence.

- Part C explores academic interpretations of Social Sustainability, to evaluate its relationship to crime prevention and scope for providing local community context.

This was important for identifying parameters to explore social context and provide a transferable, holistic model for consideration in CPTED planning.

- Parts D and E tested the transferability and impact of the proposed developments to the CPTED concept in terms of the CPTED framework and the model for evaluating social context through parameters of social sustainability.

This was important for providing a solid evidence base to support the proposed paradigm shift in rethinking the basis for crime prevention in the built environment.

The methodological approach for each section of the research relies upon the researcher's interpretation and extraction of key themes within discourse. Early parts of the thesis explore discourse within academic literature (Chapters 4-8), and latter parts of the thesis explore the discourse of human participants (Chapters 10-12). The process of turning this information in to meaningful data however adopts a systematic process, which relies upon an element of quantification. It is upon this basis that the research is considered to be quantitative in its approach to analysis and qualitative in the data collection methods used.

3.1.1: Philosophical Debate

Theory is a vital part of research and helps us to explore the world in different ways by asking new questions. Social research relies on the construction of theories, design of appropriate research methods, and the collection and analysis of data. Data collected during academic research and how that data is interpreted depends upon the theoretical perspective and preconceptions of the researcher.

A philosophical assumption is a theoretical framework used to collect, analyse and interpret data on a specific phenomenon in a particular field of study and are categorised into both ontological and

epistemological assumptions. Ontology and epistemology are branches of philosophy which allow the researcher to understand how and why something is right or wrong by the specific knowledge they have and the use of parameters to evaluate their knowledge.

3.1.1.1: Ontological and Epistemological Position

Ontology in the general sense, examines the nature of reality, whereas epistemology explores methods to figure out what the reality is. The ontological and epistemological position of the researcher has a bearing on the methods selected for research. Ontology questions whether social entities need to be perceived as Realism or Relativism. Realists hold the position that social phenomenon has an existence that is independent or separate from the actors within it, and that a statement is true only if it agrees with the facts. The findings are therefore dependent upon empirical testing which are independent from influence of either the researcher or the researched. Relativist ontology is the belief that reality is a finite subjective experience (Denzin & Lincoln 2005). It assumes that social phenomena and their meanings are continually being changed and revised through social interaction; that there are no facts, only beliefs which make up reality. An example of this is that human beings construct organisation and culture instead of the organisation and culture being pre-given categories which affect behaviours. The ontological position of the researcher is important at the beginning of the research process since it determines the epistemological assumption, the research design and the process for analysis.

This research adopts a realist ontology in that it relies upon what is empirically demonstrable for the basis of acquiring knowledge and truth about the CPTED concept. Realism is evident in the need to test, through a systematic analytical processes, which criticisms contain the least bias in the CPTED knowledgebase. Bias in this sense refers to the extent to which criticisms identified as most frequent may be the output of one independent researcher or a small group of researchers, the consistency of conclusions across different geographic areas and the use of different research methodologies etc. This analysis helps the researcher to be certain that the criticisms selected for further exploration in this PhD are robust. A realist ontology is also evident in the need to empirically test the proposed frameworks using human participants, whilst remaining objective in the approach.

Whilst relying on what is empirically demonstrably in latter parts of the thesis (chapter 10-12), there is an appreciation that perceptions of the physical and social world may vary in the context of CPTED, crime and fear. These chapters perhaps adopt a more relativist approach in that they explore the differences in responses of different social groups and appreciate the different social forces that may be influencing their perception. That being said, the research method and analysis in a broader sense still depends on what is empirically demonstrable and the objective of the analysis is to test the transferability of both frameworks with the aim of developing a tool which is universal in its approach.

Epistemology concerns the way in which we acquire knowledge about the world and what forms the basis of our knowledge. Once the epistemological position is chosen, the researcher often adopts methods that are characteristic of that position.

There are two opposing epistemological stances of Positivism and Interpretivism. Positivism is based on empiricisms and believes that society operates according to general laws and intuitive knowledge is rejected. Positivists argue that all accurate knowledge can be verified, and assumes that only knowledge that can be verified is scientific. Using a positivist approach, it is important to look at society as a whole through the use of scientific enquiry. Interpretivism argues that individuals react differently to external social forces, and that they experience and understand the same 'objective reality' in different ways. This research adopts both positivist and interpretivist stances throughout different sections of the research.

Early parts of the thesis (chapters 4-9) take a positivist stance in that the data analysed is representative of the CPTED academic network as a whole. Whilst exploring the perception of the academic community on CPTED, the criticisms that underlie the CPTED knowledgebase are not analysed in terms of the external social forces or individual understanding of the concept. The approach to data collection allowed the analysis of perceptions on a universal basis and no broader context was considered in this approach. It is therefore argued that the findings from this analysis in these chapters are likely to be universal problems. The analysis in these chapters is also quantitative,

searching for patterns in the data to inform the development of a coherent theory/understanding of the underlying problems within the CPTED knowledgebase.

Chapters 10-12 adopt a more interpretivist stance by considering the importance of the intricate and complex nature of individuals and how different people can have different experiences and understandings of the same objective reality. Whilst this is just a premise, the methodological approach for these sections took account of the possibility that there may be differing perceptions by conducting research of human participants from different professional backgrounds and demographic groups. The findings of these sections suggested that there was some slight variation in the experience, perception and understanding of participants which reinforces the importance that context is vitally important for crime prevention.

3.1.1.2: Methodological Position

Inductive reasoning holds that knowledge is built in a ‘bottom up’ process through observations of the world (Ormston et al 2014). Deductive reasoning begins with a theory or knowledge about a given phenomenon then narrows down to more specific phenomena that can be tested.

This research is both inductive and deductive. The research begins using deductive reasoning since it starts general, exploring the theory as a whole, and recognising that there are a number of problems worthy of investigation. It then narrows down to more specific problems for enquiry (chapter 4).

Inductive logic is then adopted in a theory building process (chapter 5, 6 and 8), using a ‘bottom up’ method of systematic observations and exploratory analysis. Deductive reasoning is then applied to latter parts of the PhD during the empirical analysis (chapter 10, 11 and 12). This phase of the research relies upon testing hypotheses and conducting observations to address the hypotheses, and confirms that the two empirically tested frameworks have filled a research gap, solved the problem identified through the exploratory analysis and contributed to new knowledge in the field.

3.1.1.4: Theoretical Position

The theoretical position of this research aligns with Grounded Theory which is a systematic methodology used to construct theory through data analysis. It is a systematic generation of theory

from data that contains both inductive and deductive thinking with the ultimate goal of formulating hypotheses based on conceptual ideas. Research using Grounded Theory often begins with a question or a collection of qualitative data. As the data is reviewed, repeated ideas or concepts become apparent. These concepts or ideas are assigned codes as they are extracted from the data. These codes can then be grouped into concepts and into categories to become the basis for a new theory.

Grounded theory was developed by Sociologists Glaser and Strauss. Their work was influenced by the belief that researchers needed a method that would allow them to move from data to theory so that new theories could emerge. These theories would be ‘grounded’ in the data from which they emerge and therefore would be context specific, relying on analytical constructs from pre-existing theories.

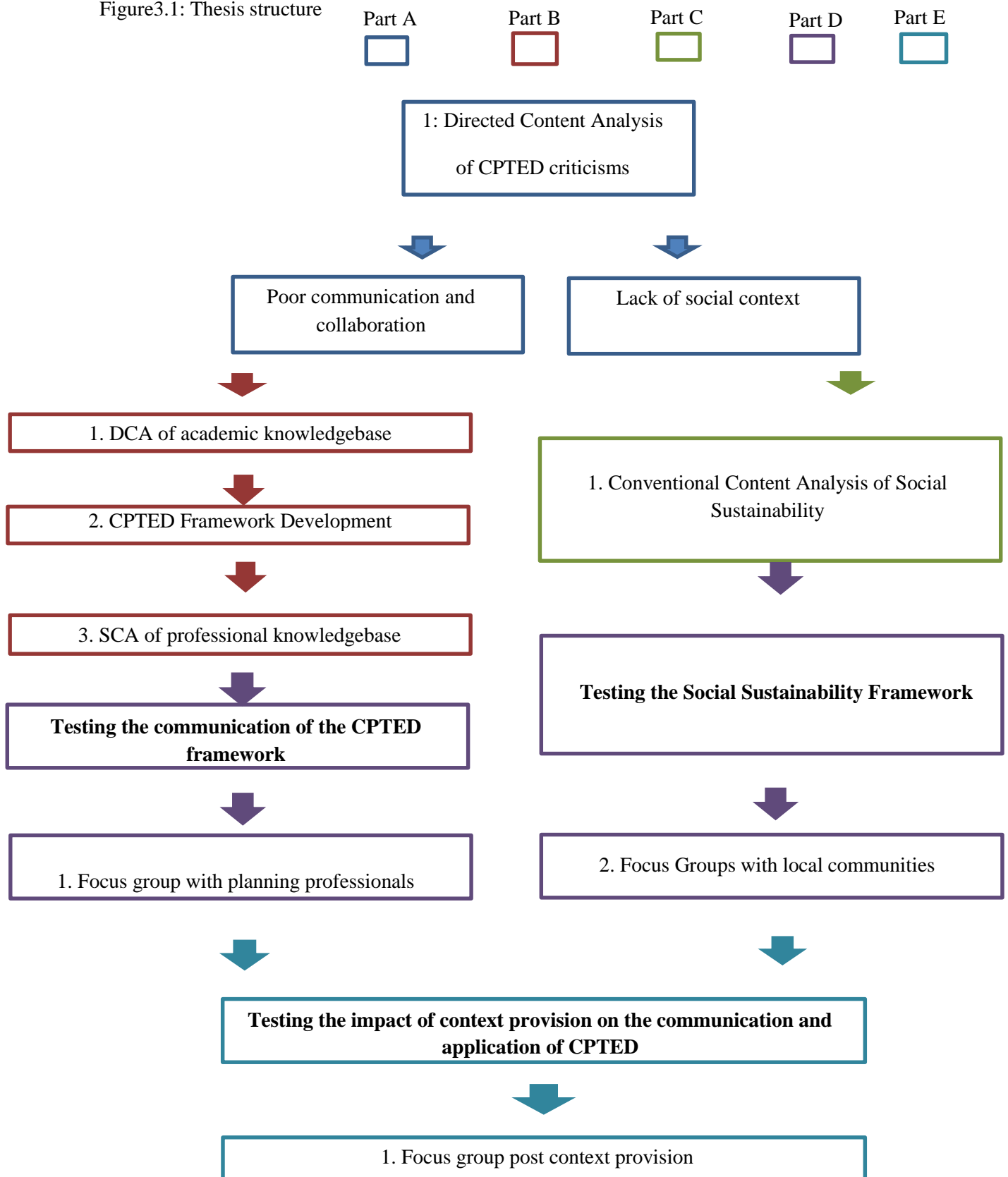
The major focus of Grounded theory is the use of data and theory to identify categories, which forms the basis of this PhD. Categories are formed throughout various stages of the analysis and the researcher moves back and forth between data collection and analysis. This means that the data collection process of each stage is often dependent on the findings from the previous section which makes it emergent in nature. The aim of this movement is theoretical saturation. This means that the data is coded until no new categories can be identified. Whilst theoretical saturation is always the aim, it is often the case that categories can be modified or changes in perspective may occur.

Grounded theory is compatible with a range of data collection methods. The researcher often collects some data (in this case, all published academic texts on CPTED), explores the data through open coding, establishes tentative links between the categories (in this case, the CPTED research network), then returns to the field to collect further data (in this case, the CPTED frameworks). This process is then repeated using the new data to continuously develop theory (in this case the incorporation of social sustainability for social context analysis) and inform the collection of further data (i.e. from focus groups with participants). Data collection is progressively informed by the emerging theory (See figure 3.1 for an illustrative diagram of the emergent methodology). The research process begins generalised and exploratory, then develops and tests as the theory as it progresses.

Actor Network Theory (ANT) is also touched upon in Part A: Section 1 of the research methodology since the methodological approach focuses on the connections between human and non-human entities (i.e. the CPTED authors and research publications) to identify networks of authorship and how these may influence bias within the content of the literature. ANT goes beyond the borders that are usually set in exploratory research and continues the investigation when it enters different contexts or underlying structures. This is often done through observations, document analysis or in-depth interviews. It is stressed that actor network theory is only adopted in part for this research methodology and is used only to identify the connections between different entities based on a defined set of criteria. The context of these connections or what this means for the content of the CPTED knowledgebase is not considered important in this research.

Symbolic interactionism is a third theoretical framework adopted within the research, particularly relating to the exploration of social context with local communities and the symbolic meaning that people depend and rely upon in the process of social interaction and the way in which they live their lives. Symbolic interactionism traces back to Webber's assertion that individuals act in accordance to their interpretation of the meaning of their world which also aligns with the interpretivist-relativist paradigm adopted for this section of the research. In this part of the thesis, the analysis addresses subjective meaning that people impose on objects (i.e. buildings, streets, parks), events (crime, loitering, busy streets etc.), and behaviours (begging, violence etc.). Subjective meanings are important for this analysis because people's behaviour is dependent upon what they believe and what their perception is, again, stressing the importance that a grassroots approach through community engagement is vital for CPTED planning.

Figure3.1: Thesis structure



The following sections will explain the methodological approaches adopted for each part of the thesis. It is important to recognise here that due to the emergent nature of the methodology adopted in this thesis, only a brief introduction of the research methods will be discussed in this chapter since the detailed methodology only emerged following findings from the previous sections. A more comprehensive overview of the methods for data collection and analysis will be discussed in detail in each chapter.

3.2: Part A Section 1: Content Analysis of CPTED literature

The literature review set out in the introduction of this thesis highlighted a number of criticisms of the CPTED concept. Whilst these criticisms are all considered important and impactful to its development, and are all inherently linked, the sheer volume of issues identified made it an unrealistic task to deal with them all in depth within the constraints of this thesis. It was therefore vital that the key issues were further explored through a robust analytical process to be confident that the criticisms chosen for analysis in this PhD were the most unbiased and justifiable issues in terms of having the most significant positive impact on the future development of the concept.

As mentioned in the literature review there has been a substantial shift in focus over time with regards to the CPTED criticisms; this is probably a result of the concept incorporating different schools of thought and various political developments. What has not been considered however is how reliable these studies are in providing solid evidence to improve and update the CPTED concept.

The literature revealed that the most dominant criticisms in the field related to 1) poor CPTED stakeholder engagement, 2) the transferability of CPTED knowledge and 3) the integration of CPTED principles into more socially oriented concepts such as sustainable communities and sustainable development practice. The integrity of research publications is however vital for relying on identifying key problematic issues as the foundation for further research. One might easily accept that collaboration difficulties are the main cause of disconnection between CPTED and town planners because of its frequency and consistency of occurrence in the literature. However, consideration of the

complex research networks that lie behind these publications and the impact this has on the author's perception of CPTED has been given little thought.

The aim of Part A was therefore to accurately identify the main problems identified by academics in the CPTED field and provide additional integrity and value to the findings of the introductory literature review.

The methodology employed to test this hypothesis was Directed Content Analysis and was driven by Actor Network Theory (see Latour, 2005)

Research networks can be highly complex and are formed by relationships between academics and practitioners in the field as a result of a number of influencing variables, such as co-authorship, authors discipline, author's institution, and the like. These connections may impact upon the reliability and frequency of a particular criticism emerging through published material in the field. Exploration of criticism context is largely qualitative in nature due to the methods employed, however it did contain a quantitative element through the analysis of frequencies and consistencies of key issues. The methodological process extracted data from the literature as a medium to assess the evidence base behind the CPTED criticisms'; this is fundamental to the scientific principles of this thesis which are embedded in the Crime Science philosophy (Smith & Tilley 2005).

There are a number of different types of content analysis which vary according to the research questions, inferences, the nature of the dialogue in question and the problem being studied (Weber 1990). In general, researchers often regard content analysis as a flexible method which is used to analyse and interpret text data (Cavanagh 1997) and is essentially a term used to describe a family of analytic approaches. These can range from impressionistic, intuitive, interpretive analyses, to the more systematic and strict textual analysis (Rosengren 1981). This research adopts a more systematic approach. Content analysis follows three basic values of scientific method; these include:

- 1) Objectivity: This states that the analysis is carried out with explicit rules in place which enable researchers to reach the same results from the same material.
- 2) Systematic: This is the inclusion or exclusion of content according to consistent rules. The

possibility of inclusion bias based on the researcher's ideas is eliminated here.

3) Generalisability: The results reached here can also be applied to other similar situations (Prasad 2008).

Content Analysis in this section follows a systematic approach in that the inclusion and exclusion (Table 3.1) of material is defined by a set of pre-determined rules, however also remains objective in the approach. The inclusion and exclusion criteria are only intended to source the most relevant literature for the study and to remain focused in its approach. The criteria will be discussed more in Chapter 4, (Section 4.1.1).

Table 3.1: Inclusion and Exclusion Criteria

Parameters	Inclusion Criteria	Exclusion Criteria
Location	Worldwide	-
Language	Studies written in English	Studies not written in English
Time Frame	Studies published from 1970 (inclusive)- 2014 (analysis end date)	Studies published before 1970
Study Type	Qualitative and Quantitative Critical theme	Non critical acceptances
Source	Textbooks Journal Articles Peer reviewed articles	Second Generation CPTED studies

Content analysis is an extremely flexible and confirmative approach to analysing text and dialogue, and arguably a very useful analytical technique. However, since its early development, the failure to generate a firm definition and procedure for each form of analysis has potentially left it limited in its application (Tesch 1990), but also leaves scope for adaptability to the nature and aims of the research. Content analysis is the analysis of what is contained within a message or piece of information (Prasad 2008), broadly speaking, the content of the message forms the inferences and conclusions drawn (Nachmais and Nachmais 1976). Content analysis falls distinctly between observation and documentation analysis and is briefly defined as a method of observation (Kerlinger 1973) The sense of observation derives from Kerlinger (1973) who claim that content analysis 'takes the communications that people have produced and asks questions of communications' (1973: 525); as opposed to asking people to respond to questions. In the case of this research, the communication

which is being analysed is the perceptions of CPTED published in academic literature and the questions posed are associated with the justification and integrity of that content. It is therefore asking questions of the communication and not influencing communication in anyway. This approach is classified as an unobtrusive or non-reactive method of social research (Prasad 2008) and subsequently minimises bias in the outcome of the communication.

The type of content analysis used in this part of the thesis takes a directed approach. Directed Content Analysis (DCA), is used when existing theory or prior research about a phenomenon exists but is incomplete or would benefit from further description. In this case, prior knowledge derived from the literature review which found that there were several key problematic issues within the CPTED field and further research was sought to establish the reliability of that information. When using a directed approach, content analysis is guided by a process which is more structured than a conventional content analysis approach (Hickey & Kipping 1992), since the researcher identifies variables as initial coding categories based on the hypothesis and aim of the analysis. For this part of the research, elements of Actor Network theory (Callon 1991; Latour 1987) were used as a theoretical framework to direct the categorisation of text throughout the DCA process and to provide more integrity when analysing the complex and intricate networks behind the CPTED knowledgebase (refer to forthcoming section on DCA in chapter four).

3.2.1: Actor Network Theory

Actor Network Theory (ANT) is an approach to social research which assumes that the objects being analysed are part of a social network. It evolved from the work of Michael Callon (1986) and Bruno Latour (1987) at the École Nationale Supérieure des Mines de Paris with an initial attempt at trying to understand the process of innovation and knowledge creation within the science and technology field. Around the early 1990's and onwards, ANT became popular within a range of disciplines, typically represented in parts of informatics, health, geography, sociology, anthropology and economics (See Cresswell et al 2010; Bosco 2006; Murdoch 2001; Oppenheim 2007; Roberts 2012). From 2008 it became a widespread approach which is used in substantially different ways across disciplines and subsequently became difficult to summarise, define and explain (Cressman 2009). In the case of this

research ANT is referred to as an approach in social theory and research which explores connections between entities and thus assumes that all entities are part of a social network. This research uses ANT to support the comprehensive exploration of relational ties within a network, although it does not explain the *why* or *how* a network takes the form that it does. It aims to illustrate how networks join and analyses different attributes together in a network and the subsequent impact this has on the coherent whole (the CPTED knowledgebase).

Various social, economic and political movements can unsettle and change many of the arguments about the pros and cons of CPTED. Shifts in philosophical assumptions and various societal developments can reveal limitations which were somewhat dormant until brought to the forefront of criminological thought as a result of such changes. For example, post 9/11 shift to using design and infrastructure to prevent terrorist attacks targeted at buildings and streets may impact upon people's perception of CPTED and its ability to tackle various types of crime. These changes can bring forward criticisms which may otherwise have not come to light and can only be analysed through methods such as ANT to help establish the network of relationships and changes in thought over time. These changes in perception can then be investigated further for more detailed explanation.

Scholars utilising ANT often find it useful to share concerns with documentary scholars about the constructs of facts and truths. When ANT was developed in the 1980s, this brought about a Foucauldian distrust of contradictions when analysing scientific practice (Callon 1986; Latour 1987; Callon & Law 1982), enforcing the idea that the social world expressed through language is affected by various sources of power. Using ANT with DCA attempts to understand these connections and studies the categorisations of opinions with attributes of the literature and personal and institutional relationships.

Fundamentally, ANT is a theory of relationships with the analytic task of seeing how these relationships form, change, and cluster in ways of thinking. It is therefore logical to hypothesise that these relationships and drivers behind the CPTED research network could in fact contain some bias which may influence the frequency of criticisms published in CPTED literature.

Gershon and Malitsky (2010) believe this reliance on the relationships between actors generates four major conceptual consequences. Firstly, ANT implies that everyone and everything contributes to how interactions take place, in this case the actors are the authors of the material being studied. Every node in the network therefore shapes the ways in which interactions in the network will occur (Raffles 2002).

Second, all actors are different. These differences, in part are the result of varied social and historical trajectories which form the opinions of those within the network.

Third, ANT relies on the performance of 'actants' (entities of a social network; see Latour 2005) and the subsequent nature of relations which are fully constituted by the relationship. Gershon and Maktisky (2010) insist that networks and actors are constituted by performance and they do not prefigure these enactments. The inference can therefore be made that everything is uncertain and relationships are reversible. In the case of this research, these relationships are reversible in that authors can form conflicting opinions or change research interest and direction and the relationship could be broken. However, with a volume of published literature documenting their academic collaboration, the evidence of this will always exist.

Using ANT to guide data collection through DCA provides a suitable theory for analysis by giving justification for the content extracted from the literature. It helps consider the literature beyond the content of communication by considering the source and context of the communication as a focus for analysis. Exploring the research networks in this way ensured that all potential bias in the frequency of CPTED publications is ruled out and that the issues explored in this thesis are fully justified and important for the future development of CPTED.

3.2.2: Justification of DCA for Part A

DCA is considered the most suitable method for Part A of this thesis since the central aspect of this section is the communication of CPTED knowledge and the analytic procedures directly examine text

from the output of academic contributions. The communication in this sense is represented by knowledge disseminated through academic publications in the CPTED field.

Content analysis also combines both qualitative and quantitative methods which are recognised as antithetical modes of analysis. This is highly important for this study which is rooted within the Crime Science discipline since it has the ability to turn qualitative information into robust quantitative analysis. Using DCA allows the analysis of documented communication over a long period of time which provides a more comprehensive overview of the way in which perceptions of CPTED have changed. In this sense, DCA is more holistic in its approach since various cultural, economic, social and political changes can be accounted for. Finally, an important factor of DCA is that it is an unobtrusive measure since there is no awareness that such communication is being analysed and therefore does not inflict bias on the nature of the communication (Weber 1990).

3.2.3: Limitations of DCA

Using theory for the analysis of content does present some inherent limitations. The approach to the data may be informed but subsequently biased due to pre-existing knowledge about the phenomenon. In many cases it may seem logical that the researcher is likely to confirm supportive rather than non-supportive evidence for the theory in question; yet for this analysis the aim is to identify and rank the criticisms of CPTED, and it will therefore follow that the findings will be somewhat non-supportive of the concept. Although the research will provide non-supportive evidence, the aim here is not to criticise the concept, or the work of its contributors, but rather support it in forming an evidence base for further research needed to enhance and improve the concept by recognising its key deficiencies.

Another limitation could occur due to an overemphasis on theory. According to Hsieh & Shannon (2005), this can blind researchers to contextual aspects of the phenomenon and can cause '*neutrality or conformability of trustworthiness as a parallel concept to objectivity*' (Hsieh & Shannon, 2005; Lincoln & Guba 1985). To overcome and prevent this from occurring, an audit trail of key words or concepts can be incorporated into the analytical process to increase the accuracy of pre-determined categories. An audit trail in qualitative and quantitative research demonstrates a thorough collection of documentation regarding all aspects of the anticipated research topic. It is a strategy used to establish

the confirmability of research which is needed to integrate into the research process. The development of an audit trail is recommended by several researchers, such as Hoepfl (1997) and Koch (2006), who suggest the trustworthiness of a study can be established by auditing the events, influences and actions of the researcher. Research analysing opinions in a qualitative manner from literature often emerges through an iterative process of data collection and analysis. This requires frequent decisions to be made by the researcher, decisions which can completely alter the course of the study and must therefore be documented. This documentation records the processes of the study and can be vital at later stages to provide justification for such actions which will be vital to validate the rigour of the research and strength of the results. Rice & Ezzy (2000) suggest that '*maintaining and reporting an audit trail of methodological and analytic decisions allows others to assess the significance of the research*' (2000:36). It seemed reasonable therefore to employ this technique to ensure all decisions and process changes were accounted for.

3.2.4: Research approach

A literature scope was used to explore if any studies had previously conducted a content analysis to identify criticisms within CPTED literature and the potential for bias within the research network. Several key phrases were used to identify potential literature which may duplicate the research conducted in this chapter. This process is discussed in detail in chapter four (Section 4.1).

A range of key search engines were used to explore documents which could be used in the analysis. These covered electronic databases, core bibliographic databases, internet searches and other databases and research registers.

Nine articles were found which set out solely to analyse the CPTED criticisms, three of which were empirical studies testing the effectiveness of CPTED and the remaining hits were basic literature reviews with no detail about the data used or any discussion of a systematic approach. It was therefore confirmed that no studies had ever adopted a systematic directed content analysis to explore criticisms within the CPTED knowledgebase and the complex research network that lies behind them.

This analysis relied upon an exhaustive sample of literature to extract data on the CPTED criticisms. The main literature search, therefore set out to retrieve every single published, publically available document on CPTED. Further key terms were therefore adopted. These can be found in the detailed methodology discussed in chapter 4 (section 4.1.1). It was important here not to exclude literature which discussed the CPTED principles but did not discuss CPTED as a whole. This was considered in the literature searching exercise.

A total of 423 documents were retrieved that related to CPTED; the bibliographies of all 423 were searched manually to highlight any literature missed from the initial search.

Using the inclusion and exclusion criteria (Table 3.1), the documents were refined to leave only those which contained a critical discussion of CPTED which was a total of 153 documents.

Using Actor Network Theory as the theoretical framework for this analysis, the researcher aimed to extract any data which may represent commonalities between authors in the CPTED field. This data formed categories for analysis which were emergent in the document, e.g. *'criticism'*, *'author name'*, *'methodology'*, *'author perception'*, *'author discipline'*, *'data'*, *'scale'*, *'type of document'*, *'place of study'*, *'place of author'* etc. These categories are discussed in more detail in chapter 4 (section 4.2).

Graph visualisation and manipulation software was used to visualise the connections between academics and published documents using the categories above. This showed various patterns that could indicate bias within the literature such as small groups of authorship; geographic clusters; temporal clusters; clusters in scale, methodology, discipline etc. The results provided an indication of which criticisms contained the least bias and were more robust in their evidence base and justification.

Due to the emergent nature of this research, a more detailed discussion of the methodological approach is discussed in chapter four.

3.3: Part B Section 1: Content Analysis of CPTED frameworks

The DCA in Part A: Section 1 (Chapter four) of this thesis highlights two major issues in the CPTED field. The first is that CPTED is primarily limited due to poor communication and collaboration between CPTED stakeholders. The second is that because CPTED planning often lacks consideration of the social context of crime; this not only limits the understanding of crime as a phenomenon in the built and social environment, but also reduces the sustainability of crime reduction effects and its ability to integrate into sustainable development practice. Part B of this thesis explored the communication and collaboration barriers and Part C explored how exploring social context can be used as a process for facilitating the understanding and implementation of CPTED in built environment practice.

The aim of Part B Section 1 (see figure 3.1) therefore is to identify the source of barriers to communication and collaboration within the CPTED field.

The methodology employed for this section uses a Summative Content Analysis

Content analysis in Part B of this thesis was be used in a different way to Part A. In part A, the focus was to explore themes within published literature in the CPTED field to identify author's perceptions of CPTED and categorise criticisms of the concept. The content analysis was directed in its approach by using ANT as a framework for data extraction with the particular aim of analysing the integrity of the criticisms through a defined set of characteristics.

Part B of this thesis adopted a type of content analysis which focused specifically on the meaning of words and their interaction with various definitions. Since the aim of Part B section 1 was to analyse communication barriers within the field, the CPTED framework was considered a suitable variable for the communication of knowledge since it is used as a tool for implementation and incorporation into policy and guidance across disciplines.

Content analysis as a research method helps make replicable and validate inferences with the purpose of providing new insight from a collated set of text or words (Krippendorg 1980). In the case of this

research, inferences can be drawn as to the reasons behind barriers to communication in the CPTED field. A summative approach to content analysis begins by identifying and quantifying certain words or content with the aim of understanding and interpreting the contextual use of words. In the case of this research, the texts explored were the various components and accompanying definitions of the CPTED framework to explore variations between the meanings of words across the field. Whilst this analysis does quantify text, its purpose is not solely to infer meaning but also to explore the usage of certain terms and phrases and their associated context and therefore is both qualitative and quantitative in nature. Summative approaches exceed standard word frequency by including latent content analysis which is the process of interpretation (Holsti 1969).

Summative content analysis explores the frequency of words which are identified, extracted and calculated and makes sense of that quantification (Humble 2009). The underlying context (or definition in this case) and the way in which these terms are used is analysed. It focuses on discovering the meaning of words and content (Babbie 1992; Catanzaro 1988; Morse and Field 1995) and therefore sets it apart from traditional directed content analysis. For this type of analysis counting is often used as a mechanism to clarify the context of words or phrases based on frequency. In this case, the frequency of words with matching definitions would be considered to have higher integrity than words with many definition variations. Researchers often use this to explore word usages and discover the range of meanings a particular word can have. Due to its exploratory nature, this process uses inductive reasoning by which themes and categories emerge from the data whilst also synthesising the latent meaning of content (Zhang & Wildemuth 2009); the objective being to refine and update the theory.

3.3.1: Advantages of Summative Content Analysis

Like Directed Content Analysis, Summative Content Analysis provides an unobtrusive method for studying a phenomenon of interest without the research inflicting biased on the outcome of communication (Babbie 1992). The analysis helps researchers consider the way in which words are used and the relationship or variation this has between different sources of communication (different published material in this case) which is the aim of this section. Summative content analysis also

provides both qualitative and quantitative results which are important for Part B Section 2 (chapter five) which applied the findings from this section to restructure and re-emphasise the CPTED framework based on a consensus of academic interpretations supported by theory. The approach offers an inductive method for exploring the content of communication. Exploring published material on CPTED was considered the most important source of data since it captured opinions of academics across the world and it also has the ability to explore archived information and how perceptions have changed over time; other methods including human participants would not have this benefit. Summative content analysis is considered the most appropriate method for analysis because the context of content in data is as important as the words and phrases extracted. This method allows a deeper exploration of theory to ensure that the framework development process in Part B: Section 2 (See figure 3.1) is robust and of high integrity.

3.3.2: Limitations of Summative Content Analysis

Summative Content Analysis is limited by the lack of attention to the wider context of the document from which the content has been extracted (Hsieh & Shannon 2005). In this research, CPTED frameworks and their supporting definitions were extracted from the literature as data to explore the basis of CPTED knowledge and its theoretical foundation. Extracting framework terms is valuable for analysing frequencies of concept headings and understanding the most dominant frameworks disseminated for guidance. What sets Summative Content Analysis apart from other qualitative content analysis methods is the wider context of the key words in terms of their theoretical assumptions. Extraction of this information however does not take into consideration the context of the wider document which may discuss its component parts in depth or in different contexts and may therefore impact the framework being proposed. Whilst this may be deemed problematic for other areas of research, in this case the CPTED framework is considered as a guidance tool which can be considered fact by its reader; these frameworks are also incorporated into manuals and policies with minimal explanation and is therefore expected to be considered as an independent entity without broader context. For that reason, it is not considered to be a limitation of the analysis but rather a reflection of CPTED's reality in practice.

3.3.3: Research Approach

This chapter had one clear objective which was to identify why there was so much confusion in research and practice surrounding the CPTED concept and if this was a potential source of CPTED stakeholder's reluctance to engage in crime prevention practice.

The CPTED framework was considered to be the most appropriate medium by which CPTED knowledge is disseminated across research and practice and was therefore the focus for this analysis.

The data collection process involved the exhaustive sample of literature on CPTED that was collected for the mapping of CPTED criticisms in Chapter four. The same sample was used because this captured every published academic document on CPTED, however for this section of the research, a different inclusion and exclusion criteria were applied (see table 3.2).

Table 3.2: Inclusion and exclusion criteria

<u>Parameters</u>	<u>Inclusion Criteria</u>	<u>Exclusion Criteria</u>
Location	Worldwide	
Language	Studies written in English	Studies not written in English
Time Frame	Studies published from 1970 (inclusive)-2014 (end of analysis)	Studies published before 1970
Source	Textbooks Journal Articles Peer reviewed articles	Second Generation CPTED studies
Content	Contains a CPTED framework	Papers without a CPTED framework
Type	Academic documents	Practice documents

The importance of this inclusion and exclusion criteria is that it extracts all documents that contain a CPTED framework, which was the focus for the analysis.

A total of 68 documents were included in the analysis with publication dates ranging between 1978-2014 when the analysis was complete. The analysis process involved extracting the key concept headings and their definitions, the authors name and the source of the documented framework. This was to avoid any duplication. E.g. if author A and author B contained identical frameworks within their publication, one might assume that they have interpreted CPTED in the same way. However, if

their frameworks are referenced to a framework published by another academic then this would just be classified as one framework version as opposed to two.

Following the extraction of data from the literature, the frequency of framework terms and sources were established to see which concepts were most recognised in academia. Variations in terminology and definitions were explored by aligning definitions and exploring the latent content of the definition to identify its position as guidance. Some frameworks were nothing more than a statement, e.g. “sightlines increase surveillance in public places”, however this does not provide guidance, nor does it identify the anticipated outcome or evidence of underlying theory. This chapter argues that practical guidance, expected outcome and theory is important for direction, given the inter-disciplinary nature of CPTED and the reliance upon understanding from professionals using the framework.

The objective of this analysis was to identify where the communication and collaboration difficulties came from and if the CPTED framework as a tool for guidance could be improved to reduce this barrier.

Due to the emergent nature of the research, a more detailed discussion of the methodological process is provided in chapter five.

3.4: Part B Section 2: CPTED framework development

Part B Section 1 (Chapter six) of this thesis explored the knowledgebase of CPTED to identify specific terminology and definition conflicts which negatively impacted upon the process of communication and dissemination of CPTED knowledge across built environment disciplines. The data extracted helped evaluate the consensus of interpretations across the field and explore the way in which CPTED was presented to a stakeholder in this field. Using Summative Content Analysis, framework terminology and definitions were extracted and quantified in order to deliver a defined set of terminology which holistically represents the concept.

In the field of CPTED, terminology and definitions within the CPTED framework have become an increasing topic for debate (See Ekblom 2011a). Previous discussions have often been generalised and

subjective to the researcher's opinion with little or no solid foundation to begin the process of updating although there have in the past few years been calls for the CPTED framework to be restructured and updated (See Ekblom 2011b). This analysis provides a process to holistically consider the CPTED knowledgebase and systematically consider its intentions and meanings based on theories of crime and criminal motivation. Restructuring the framework in this way helps to facilitate a deeper and more integrated form of communication across disciplines.

The aim of part B Section 2 was therefore to theoretically map concept with theories of crime and criminal motivation in order to develop a structured CPTED framework with high theoretical integrity.

The methodology employed for this analysis is Conceptual Mapping of CPTED principles with Crime Theory

3.4.1: Conceptual Mapping

Conceptual mapping is a process that explores the relationship between concepts and variables. This also incorporates cross relationships between concepts and their examples/context. In the case of this research, conceptual mapping was used to link key words with concepts of crime and criminal motivation and explore the inherent links between the various components of CPTED. This helped identify the component parts of the framework, restructure the framework and clarify an overarching goal state.

Concept maps are predominantly an exploratory tool from which researchers or individuals can recognise regularities and patterns between a particular set of objects (words and theories in this case). In a case such as this where there is a large variation of terms and definitions, conceptual mapping helps explore each entity individually in a systematic and hierarchical manner to identify and confirm conflicts, links, overarching goals and dependent and independent features.

Conceptual mapping is considered the most relevant methodology for improving the theoretical integrity of the words and definitions used to restructure the CPTED framework since it ensures that

each component is guided by theory and the words and definitions used are consistent. It also provided an integral process whereby the CPTED components could be grouped and divided and where mutual goals and dependencies could be identified. The hierarchical structure of concept maps allows the researcher to begin with a theory or concept and identify components of which that concept supports. The natural flow of the concept map provides further detail at each stage in which specific examples can ultimately be reached. In instances where components of the map transcend more than one theory, specific inter connecting symbols or words can be used to highlight their relationship and define the context of that relationship (Macnamara 1982).

3.4.2: Research approach

This chapter aligned concept definitions from the CPTED framework with theory of crime opportunity in order to develop a robust framework with direction for the reader. This was done through an interpretive process which identified the theory underlying the definition of each concept without being influenced by terminology of the concept headings.

In order for theory to be present in the definition, the interpretation process was looking for reference to characteristics such as capable guardians, routine activities, costs and benefits, crime escalating into more serious crimes, the effort required to proceed with a criminal act etc., although these did not have to be explicitly mentioned. All of these characteristics align with either Routine Activity Theory, Rational Choice Theory or Broken Windows Theory which are the three theories which fundamentally underline the CPTED concept.

Concept headings and the principles within them which were incorporated into the restructured CPTED framework were a combination of frequency, theoretical alignment and consistency in definition. Whilst the most frequent concept headings are likely to demonstrate those that are more recognised/used in research and practice, there was inconsistency identified amongst the definitions, many of which varied in their theoretical alignment. It was important therefore to select terminology that showed a greater level of understanding through the consistency of definitions, and a stronger theoretical alignment for direction.

3.5: Part B Section 3: Content analysis of Professional Knowledgebase

Once the CPTED framework had been reconstructed it was important to establish if the conflicting knowledgebase disseminated from academia had successfully or unsuccessfully translated into professional practice. Because CPTED is a multi-disciplinary concept it relies upon a thorough understanding by all stakeholders involved. Having an academic knowledgebase that is conflicting and ambiguous is, as discussed by Ekblom (1997), likely to have an impact on the way in which it translates into professional guidance (See literature review section 2.6)

The aim of Part B Section 3 is therefore to assess whether academia has successfully translated the CPTED principles into professional practice.

The hypothesis is that there is a gap between research and practice in the CPTED field.

The methods used in this section adopts a questionnaire survey for sampling of data and a Summative Content Analysis for establishing the similarities and differences between the academic and professional knowledgebase.

3.5.1: Questionnaires

Whilst questionnaires were used as a method of data collection, **the aim** was merely to identify and locate relevant guidance documents used by professionals in the CPTED field and not to measure perceptions or opinions of respondents, which is the conventional purpose of questionnaire surveys. That being said, the design of the questionnaires was still important to ensure that the correct information was collected. The type of questions, the language and terminology usage and the order of questions may all impact the way in which a participant responds to the question and it is therefore important that questions do not influence respondents in any way (Rattray and Jones 2007).

Another issue with questionnaire surveys is the poor response rate. It is appreciated that people decide whether or not to participate in a given task based on the attractiveness or unattractiveness of the inherent features of the activity (Groves and Cialdini 1991). In the case of this research, questionnaire surveys were directly aimed towards professionals in the field who have likely had some engagement

with CPTED during their routine working practice. It was therefore assumed that there would be an invested personal interest in the questionnaire survey and responses would be forthcoming.

In this instance, the questionnaire was designed to capture the source of CPTED knowledge in built environment professions; that is, any policy or guidance manual which is referred to when considering crime in the built environment. Following the questionnaire surveys, a number of policy and guidance documents were retrieved which exemplified the snapshot of CPTED knowledge available to professionals in the field.

3.5.2: Summative Content Analysis

The aim of the summative content analysis used in this section was to analyse the words and definitions of the CPTED frameworks in professional documents and cross reference their definitions with the reconstructed CPTED framework. This way, it is possible to identify whether CPTED as it is proposed in academia, has successfully translated into professional guidance documents.

Another important aspect of the content analysis in this section was to analyse the context of the framework within the document and how the proposed guidance informs professionals of the theory behind the concepts through their definitions. There is a risk in multi-disciplinary collaboration that poorly translated, inconsistent concepts may not inform professionals of the benefits and the impact that particular aspects of CPTED have on the built and social environment (Zahm 2005; Parnaby 2006; Paulsen 2013), this may be particularly problematic if implemented without full understanding.

As discussed in section 3 of this methodology, the summative approach to content analysis allows both qualitative and quantitative forms of analysis. The analysis can begin by quantifying similar words and definitions in a comparative analysis then extends the analysis to include latent meanings and concepts through analysis of the definitions (Hsieh & Shannon 2005; Kondracki et al 2002). In the case of this research, this was important for understanding the theoretical assumptions of the professional knowledgebase (CPTED frameworks); so they could be synthesised and compared to academia.

Limitations to the use of summative content analysis for this section are that the comparative process is dependent on the researcher's interpretation of the text and its affiliation with specific crime theory. As a process of overcoming this limitation, a triangulation method can be adopted (Kapitan 2010) which assesses any other individual's interpretation of the text and which conceptual theme it is associated with. This reduces the risk of bias and increases the integrity of the categorisation process.

3.5.3: Research Approach

The questionnaire was designed to capture a snapshot of the guidance documents used in practice so that the academic framework could be aligned with the professional knowledgebase in terms of theory and definition.

Questionnaire sampling targeted a range of interest groups such as the International CPTED Association, Royal Institute of Chartered Surveyors, Royal Town Planning Institute etc. The questionnaire was distributed via LinkedIn and therefore had a global target but there was no way of measuring how many people the survey reached.

Two themes were explored in the survey: If the knowledgebase in practice reflected that in academia, and to assess professional's interpretation of the terms extracted in academia, thereby exploring professional's interpretation of the proposed framework from chapter six.

The proposed framework for chapter six was used compare and contrast between the academic and professional knowledgebase since the framework was considered to be a holistic catchment of all CPTED knowledge proposed in academia.

Documents provided by professionals were varied, some making reference to more than one which is to be expected. What was noticeable however is that professionals from countries such as Trinidad and Tobago who do not have crime prevention formally embedded within planning legislation, relied upon the use of frameworks such as Safer Places which was designed for the UK context. This is inherently problematic in that crime prevention measures designed for a UK context may be potentially criminogenic in other areas (in reference to the discussion of Atlas' Offensible Space

argument regarding territoriality in chapter six). This reinforces the important need for a holistic framework which relies upon the professional to analyse their own context.

The content analysis process followed a similar process to that in chapter five when the academic knowledgebase was analysed. Documents which did not have a formalised crime prevention framework were excluded from the analysis since it is argued that frameworks are essential for guidance and direction and for distinguishing the interconnected theoretical relationships between the CPTED concepts. Each framework also required an accompanying definition since that was the data to be extracted for academic and theoretical alignment.

The alignment process was again dependent upon the interpretation of the researcher, however there was inter-rater reliability testing was carried out by using two independent researchers to carry out the same alignment interpretation process which generated the same outcome. This reinforces the rigor of the results obtained and the objectivity of the researcher during this process.

Alignment of concept definitions from professional guidance documents required evidence of practical guidance, anticipated outcome and underlying theory in order to be aligned with the academic concept. Without this it becomes vulnerable to misinterpretation by professionals.

Due to the emergent nature of this research, further detail on the methodological process and the results for this section of the analysis is provided in chapter seven.

3.6: Part C: Content Analysis of social sustainability and model development

This thesis has a dual aim, one of which attempts to alleviate a major communication barrier in the field and the other which attempts to improve the consideration of social context to positively impact professional's ability to make informed decisions for CPTED and integrate CPTED principles into planning processes and policy. As part of an attempt to address the social context issue, a standardised model for context evaluation would be a good way of guiding this process (Atlas 2002) towards a more 'holistic form of urban sustainability' (Cozens 2007:139) since there is currently no formal

structured guidance for the analysis of social context as discussed in the literature review. It is assumed that guidance of this sort would help increase the understanding of relationships between crime and the environment and improve integration with broader sustainable development agendas.

Crime prevention and planning have many mutual goals, most prevalent being the development of sustainable urban environments and improving and maintaining the quality of life of citizens. Few people would argue that crime and fear have a minimal impact on communities and the way in which people use public space, yet many fail to appreciate the serious, negative and long term implications that crime can have on the sustainability of communities. There are however, no holistic CPTED policies or standards which consider the complexity of crime, successfully integrated into the planning and urban design process.

When considering sustainable development in planning, there is often an overt focus on environmental concerns at the expense of wider social issues (Paulsen 2013). Social factors are necessary components in designing truly sustainable communities and should therefore be the foundation of sustainable community development. In order to ensure that these conditions are not conducive to criminal behaviour, it is essential that crime prevention measures consider both the physical and social environment in an integrated process to improve the sustainability of crime reduction and reduce the risk of crime and criminal behaviour having long term, negative impacts on the physical and social functioning of communities.

In order to evaluate the social context of crime in a community, parameters needed to be set due to the potentially infinite contributing factors and the complex nature of crime. Due to the inherent links between crime, sustainability and CPTED (Cozens 2002; Cozens 2007; Paulsen 2013), the concept of 'social sustainability' was used as a parameter to explore the context of crime. Social sustainability is considered a good indicator of crime risk since high crime rates will undoubtedly impact the sustainability of a community and an unsustainable social environment is likely to be socially disorganised, uncontrolled and at risk of crime and anti-social behaviour (Shaw and McKay 1942). Also, many features of a socially sustainable community have mutual goals with CPTED principles,

such as community cohesion, community participation, public engagement, and the like (Poulson 2013). CPTED and social sustainability are therefore considered by the researcher to work in concert with each other, acting as supporting structures towards collective goals. The concept of social sustainability forms an important part of this PhD thesis since it ultimately controls the quality of information used to assess the impact of the model which was to be generated.

The aim of this section is to establish what creates and maintains a socially sustainable community to provide suitable guidance for the effective consideration of the social environment when implementing crime prevention in communities.

The method used in this section is a Conventional Content Analysis of social sustainability literature

Qualitative content analysis has become an extensively used analytical tool which can be applied to a wide variety of research objectives (Allen & Reser 1990). Patton (2002) defines content analysis as *“qualitative data reduction and sense making effort that takes a volume of qualitative data and attempts to identify core consistencies and meanings”* (2002:453). For this section, content analysis was used to identify consistent definitions and indicators of social sustainability from a large volume of academic literature, the results of which were used to confirm key indicators of social sustainability for exploration in the field. The content analysis used in this section was predominantly qualitative compared to previous sections of the thesis in the sense that there was no intention to quantify categories or words. It was also qualitative since it is inductive in nature where categories and themes emerge throughout the analysis. Qualitative content analysis pays particular attention to themes which emerge from the literature, (indicators of social sustainability in this case) illustrating a range of meanings and interpretations.

The qualitative approach adopted for this section takes the form of conventional content analysis which is used to describe a particular phenomenon in depth. Preconceived ideas are avoided in this type of analysis since categories often emerge through the data (Kondracki et al 2002). Instead, researchers remain open-minded and become immersed in the literature which allows different perceptions to emerge. In many conventional content analysis procedures, interview or questionnaire

responses are often the source of data which is analysed, however in this case, the data being analysed derived from academic literature as the form of communication. Content analysis can be used in this way by highlighting key words and phrases throughout the text and categorising them into key concepts which will later be extracted from the data. Categories can then be organised and structured into meaningful clusters and sub categories. The themes (indicators of social sustainability) which emerge are grounded in the literature and reflect the academic knowledgebase being analysed. Lidkvist (1981) describes conventional content analysis as “concept development”, or “model building” which is the objective of this part of the thesis; to create a model for evaluating the social context of crime and risk.

3.7: Part D: Fieldwork

Following parts A-C of this thesis, the status of the research presented an updated framework for CPTED and a model for evaluating the social context of crime. The CPTED framework was developed following the identification of an inconsistent CPTED knowledgebase for dissemination from research to practice. The framework provided a holistic set of terminologies and updated structure to facilitate a deeper theoretical understanding in CPTED planning. What was still absent however, was the consideration of social drivers of crime; the way in which the physical and social environment impact upon human behaviour and perception of crime; and processes of ensuring that the social features (operational tasks) of each CPTED component were sustainable (this will be discussed more in Part B: Section 2 of this thesis). After establishing the importance of social sustainability in crime prevention and vice versa, the model was proposed to evaluate the social context of crime and risk in the built and natural environment.

The overall aim of this thesis was to improve and update the CPTED concept to reduce some of the problematic issues which remain. To do this, the proposed CPTED framework and social sustainability model required empirical testing to ensure that they were practical and transferable into planning practice. Part D reports on the methodological position of the fieldwork for this PhD (see

figure 3.1) which tested the transferability of the CPTED framework and the impact of the model for context analysis on professionals' ability to interpret and apply the CPTED framework.

3.7.1: Part D Section 1: Focus Groups with Planning Professionals

This fieldwork covers multiple methodological approaches based on its emergent nature and is divided into four distinct phases (see figure 3.1)

The aim of Part D Section 1 is to explore the transferability of the CPTED framework to built-environment professions and to identify contextual barriers in its application.

The hypothesis is that the CPTED framework will reduce communication barriers but implementation barriers will remain due to a lack of social context

This section strongly evidences the grounded theory approach. Grounded Theory is inductive in that it interprets recorded data about a social phenomenon to build or extend theories about that phenomenon. The technique was postulated by Glasser and Strauss in their 1967 publication *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Grounded Theory was further refined by Strauss and Corbin (1990) to further illustrate specific coding techniques for analysis. This captured the classification and categorisation of data into sets of codes (concepts) and categories (constructs) and the relationship between them. The interpretation of the interactions between participants are grounded in the observed empirical data obtained and in doing so, it is advised that pre-existing theoretical assumptions or biases are restrained and remain open during the analysis so the data can dictate the formulation of the outcomes. In the case of this fieldwork, grounded theory is evidenced in planning professional's interpretation of the proposed CPTED framework and the emergent themes (barriers) which are identified.

The method used is Focus Groups with planning professionals.

To consider the particular role that the research methods will have in providing relevant information and understanding for the study, it is important to consider the importance of broader functions of the investigation. These are often referred to as *formulation* (where research to understanding a social

problem and/or generate ideas for a policy or programme); *implementation* (where research focuses on the process of implementing policy and the barriers and facilitators of effectively doing so); and *appraisal* (which is concerned with assessing the impacts) (Lewis and McNaughton Nicholls 2014). Parts A-C of this thesis were particularly interested in understanding the social problem i.e. the barriers to CPTED communication and implementation. Part D Section 1 will then consider the implementation of the CPTED framework without provision of social context. This will assess professional's interpretation of the proposed terminology and definitions.

Focus groups were considered the most appropriate method for a number of reasons. As a research method, focus groups bring together a small group of participants (typically between 6-10) to discuss a phenomenon of interest, this usually lasts approximately 1.5-2 hours in duration (Bhattacharjee 2012). The rationale behind talking to participants in groups as opposed to other interview methods is that interaction in groups can generate a deeper form of participation (Kitzinger 2013). The main purpose of a focus group is to explore perceptions, attitudes, experiences and reactions to a particular phenomenon in a way which would not be feasible using other methods. Independent perceptions and attitudes may not be apparent in an individual setting such as one to one interview or questionnaire, but are likely to be revealed through interactions that occur during a focused discussion. The focus group therefore provokes a diversity of views in a group context similar to the real world context of the planning process.

Focus groups are particularly important for this section of the research since the data extracted from the communication context must reflect a consensus of attitudes representative of built environment professionals and not just that of the individual.

3.7.1.1: Research Approach

Focus groups were conducted with three independent organisations which reflected a variation in geographical and socio-political contexts. Each group consisted of between 4 and 15 participants and lasted approximately 2 hours in duration. The objective here was to explore professionals understanding of the CPTED framework as a benchmark for any change in their understanding and

ability to apply the CPTED framework after local context information was provided. The researcher remained objective in this process, avoiding any influence upon the research participants throughout the discussion.

The analysis process utilised a systematic thematic coding process in which key categories and sub categories emerged from the discussion. The objective of this analysis was to identify barriers to interpretation and application of the CPTED concept. With that in mind, a structured process for coding key themes and categories was adopted to ensure that only quotes that evidenced barriers to interpretation and understanding of CPTED was extracted as data. The context of these quotes was always considered during the extraction process to ensure that it did not lose meaning.

3.7.2: Part D Section 2: Focus Groups with local community groups

This phase of the research strongly reflects a Symbolic Interactionism approach which explores behaviours and social roles to understand how people interpret and react to their environment (Ormston 2014). Symbolic interactionism focuses on the interactions between people and the symbolic meanings and interpretation people attach to their environment which formed the basis for the development of Grounded Theory. This approach engaged with community groups and explored, through indicators of social sustainability, their relationship with the local environment as a means of identifying attributes which impact on crime, fear of crime and the quality of life. This stage used the conceptual indicators of social sustainability and observed participants' response to these indicators to identify empirical data for measuring social context.

The aim of Part D section 2 is to identify measurable attributes of the built and social environment which impact on resident's perception of crime, fear and social sustainability

The hypothesis is that the social sustainability model when explored with local communities will highlight many negative features of the built and natural environment

The method used in this section is Focus Groups with local community groups.

The focus of the discussion in this group is different to Section 1 of the fieldwork since it reflected real life emotions associated with personal experiences in the local environment. Participants presented their own perceptions but they also heard from other people by listening and reflecting on the content of the conversation, considering their own standpoint in light of what is discussed. This is particularly important for this phase of the research because the link between the environment and people's emotions and experiences may often be subconscious (Kollmuss & Agyeman 2002; Manzo 2003; 2005) and will not be identified until deep discussion on the subject matter is reached; further material is thus triggered in response to what they hear from others (Finch et al 2014).

Focus groups are considered synergistic (Steward et al 2007) since the interaction between participants in the group can be used to generate data and insights (Berg and Lune 2012). Since Part D Section 2 of the research is to establish relevant attributes and measure social context, focus groups provide the most suitable method due to the researcher's ability to subjectively interpret the content of the discussion and systematically extract identified attributes. There is also often a sense of spontaneity that arises from the context of the group; the languages used, the emphasis given and interaction with the researcher has an influence which may be highly beneficial when discussing unfamiliar and potentially sensitive topics. Participants may even take over the interviewing role putting the researcher more in the position of listening rather than facilitating which subsequently alleviates previously discussed issues of participant responses being affected by the research study.

3.7.2.1: Research approach

The focus groups used in this section of the research adopted the same logistical process as the previous chapter with professional participants. What was important here however was to use the social context model developed in chapter eight to guide the discussion. The objective was to explore what features (i.e. pavements, traffic, lighting) that community participants highlighted when talking about indicators of social sustainability such as infrastructure, governance, community participation etc.

The researcher had to remain entirely objective in this approach and ensure that the discussion was not influenced in any way by providing examples or encouragement towards particular predetermined features. What was also important was to reinforce the question of *why* particular features of the built/social environment were perceived in a particular way and how that impacted their use of public space. This additional context helped align the features with theory of crime and criminal motivation during the data collection phase (see Appendix I).

Analysis of the discussion was conducted using the same process as the professional focus groups where the categories were emergent throughout the discussion. These categories and sub categories helped form the basis of specific features such as cars, lighting, fences, property boundaries, that data could be collected on during the context analysis (see appendix I).

3.7.3: Part D Section 3: Social Context Data Collection

Provision of social context information to built-environment professionals was considered an important part of this PhD research since it is proposed that the way in which CPTED planning is approached and considered is revisited. It was therefore important to evidence that the proposed basis from which CPTED should be considered i.e. through indicators of social sustainability, is both impactful to and understood by professionals. A subset of this PhD research explored the characteristics of the physical and social environment identified by community participants to generate context information on risk to crime, fear and quality of life in the study area of Trinidad. Whilst the information generated was an important aspect of the PhD, it was intended only to analyse its impact on professionals rather than be a comprehensive analysis of crime risk in the study area.

This phase adopted a mixed methodology approach due to the anticipated nature of the data required. The data collection protocol derived from the environmental attributes identified during engagement with local communities as a response to the conceptual indicators within social sustainability framework. Methodologies adopted were therefore Ethnography and Grounded Theory. Ethnography is an interpretive research design which derived from anthropology; the main condition being that the phenomenon being studied must be explored within the context of its culture. Ethnographic research

requires the researcher to be immersed in the context to truly understand the nature of the phenomenon being studied. Ethnography is considered suitable for phase three since various social phenomenon were identified as attributes which impact on crime, fear and quality of life within the built environment. This required a level of observation to understand the true context of the attributes being studied. During this period of ethnography, the researcher engages, observes and records the phenomenon being explored, theorising about the behaviours and relationships observed. Research using Grounded Theory starts with a question or a collection of data. As the data collected is reviewed, repeated ideas, concepts and elements derive from the data and are coded. Codes can then be grouped into concepts and into categories and may form the basis for a new theory or approach. The difference between Grounded theory and other models of research is that the researcher chooses an existing theoretical framework (in this sense social sustainability) and collects data using that framework to show how it does or does not apply to the phenomenon under study (crime, fear and quality of life).

The aim of Part D section 3 is to analyse risk to crime, fear and perception of crime and the way in which this impacts behaviour in public spaces using the social sustainability model.

The methods used were Observations and Secondary Data Collection

The thesis will not report on the process of analysing social context within the study area as that is not the focus of the PhD, although a synthesis of this information can be found in Appendix I. This section of the methodology is set out to give insight to the methods used and the uncertainty identified although it is stressed that these are entirely dependent on the focus groups conducted in chapter eleven and may therefore not apply to another study area/ context. The fieldwork conducted in this section of the research (See Appendix I) does not in any way propose a definitive analytical methodology or approach to context analysis but rather demonstrates that community engagement directed through the model for evaluating social context can provide valuable information for CPTED planning.

3.7.3.1: Observations

Observation has been a powerful method throughout the history of qualitative research, most typically found in ethnography. They are useful for a number of research objectives; in the case of this research they were used to observe various functions of the physical and social environment based on themes identified in section 2. Observations were also used to audit the built environment and locate physical structures which form part of the social interaction and use of public space by residents.

This research adopts a method called focused observation in that focus is narrowed on the processes and problems which are most essential to the research rather than immersing oneself entirely in the culture of the population being studied. Whilst ethnography is important, focused ethnographic research in this case was considered essential due to the distinct context of the features being observed i.e. their risk to fear, crime and quality of life. The studied features for this section were therefore dependent on the context of the attribute being analysed where more than one aspect could be considered. For example, collecting data on public transport may conduct observations to analyse aspects such as frequency, distance between public transports points, lighting between transport points etc. if participants considered being at risk of victimisation when waiting for public transport after dark.

Observations were considered the most impactful and reliable method for this section of the research since the majority of data required associated with the design and function of the built environment or the interactions that occurred within it. Observations are one of the few research methods which make it possible to collect different types of data depending on the objectives of the study, all of which are unobtrusive and will not inflict bias on the nature of the phenomenon being studied. Observations are an important aspect for this section of the study since the aim is to measure risk to crime, fear and the quality of life and the way in which this impacts upon behaviour. Observations provide a more complex understanding of what occurs through observing these phenomenon first hand rather than relying on accounts from others.

3.7.3.2: Secondary Data Analysis

Secondary data analysis was used to provide additional context to the study area based on the responses from the community focus groups in Part D Section 2. Secondary research must be undertaken with care and diligence to ensure that the data obtained is the best quality available. In this case, an uncertainty matrix was used to evaluate the integrity and quality of the data source and data itself.

There are clear disadvantages using secondary data analysis due to the inherent risks of error and uncertainty in data that has been obtained second hand. In this case however, there is a large quantity of information available through government and non-government reports which would be integral to the research process and therefore the benefits outweigh the risks if the quality and reliability of the data is assessed accordingly.

3.7.3.3: Uncertainty

Exploring social context within the study area was guided entirely by participant responses in the focus groups conducted in chapter 11. Using participants to identify features may be perceived to have inherent uncertainty due to the reliance on participant perceptions of the environment which may not be considered ‘fact’ or ‘true’. Whilst this is appreciated in other contexts, with regards to CPTED the impact that perception may have on the quality of life of individuals and the way in which this changes their behaviour in the public realm is considered an important factor for crime and social sustainability. If participants *perceive* a particular aspect of the environment to be negative and this perception impacts their use of public space or their feelings of safety, this is inevitably an important aspect for consideration in CPTED planning since CPTED relies on particular behaviour and functions in the environment to sustain positive crime reduction effects. If communities’ routines and behaviours are negatively influenced by their environment, this will cause a reduction in the quality of life and CPTED aims to improve the overall quality of life (Crowe 2000), evermore stressing the importance of community perception in CPTED planning. CPTED planning being guided by community responses therefore is a dimension which should be incorporated into existing practice; not replacing existing practice.

Exploring social context within the study area utilised a mixed methods approach which was dependent upon the context of the information being analysed. Thus, the methods used for future context analysis could not be predicted or advised, hence it is not reported on in depth for this study. The main method for primary data collection used in this study was observational techniques. Secondary data was collected from online media sources, the central statistics office, TCPD policies and standards, police statistics and data published by Government Ministries. The data obtained provided a body of information which was analysed and synthesised using well established theories of crime and criminal motivation to explore its perceived impact on local communities.

3.7.3.3.1: Uncertainty in primary data collection

Primary data collection can lead to uncertainty in many forms, for example, some data is dependent upon the researcher's interpretation of an observation and the conclusions drawn from this. Many post-positivists however argue that the emphasis of research should be upon its interpretive understanding (See for example Weber 1949), rather than objectively defined phenomena. Despite important efforts to establish qualitative methodologies (See for example Denzin & Lincoln 2000), uncertainty in how qualitative research is conducted still exists. Regarding the method of conducting observations in this section of the research, a number of potential sources of uncertainty were identified. Aspects such as poor observation location, bias in frequency or value of observations, bias in the researcher's interpretation of the phenomena under observation (as previously discussed) are all identified as uncertainty in observation methods (Savin-Baden & Major 2010). An example can be provided here regarding the observation of pavement quality and its influence on pedestrianisation in the study area. Participants highlighted that many streets in residential areas have poor pavement quality or no pavements at all which restricts safety and reduces the number of people walking on the streets; naturally impacting guardianship and surveillance. During the discussions the focus group explored what aspects of pavements are problematic in order to identify particular characteristics for exploration. This provided further context on the issue such as areas where poor pavement quality was considered most prevalent, signs of poor maintenance that incite fear or cause pedestrians to avoid these areas and the most frequent hours for walking. This ensured that the data obtained reflected the

true extent of poor pavement quality in the area and the affect this may have on pedestrian use. Taking these factors into consideration when collecting data helped reduce uncertainty in primary data collection. In this instance, time series were implemented to reflect different times of the day and different days of the week and observation locations were proportionately distributed across the study area in order to reflect both busy streets and quiet streets equally. Pavement quality check lists were conducted and pedestrian activity was recorded also using time series allowing for averages to be obtained. Data obtained from this observation therefore provides a representative evaluation of pavement quality and the impact on pedestrianisation in the study area with consideration for reduced uncertainty and error.

3.7.3.3.2: Uncertainty in secondary data

This study explored police data as well as other publicly available secondary information to support conclusions regarding perceived risk and the perceived impact on the quality of life of residents in the area. Uncertainty in Police data is a common issue and one which has been prevalent for many years (See Shinar et al 1983; Johnson & Hampson 2015). A study by Johnson & Hampson (2015) revealed that even in contemporary policing practice in the UK, record management is poor and in need of improvement. Aspects regarding uncertainty and error in relation to police crime data are particularly related to the accuracy of recording crimes, the dark figure of crime, (Biderman & Reiss 1967), inadequate data systems (Brouwer 2009) and so on; not to mention corruption which is prevalent in the Caribbean region, particularly Trinidad (Pino & Johnson 2011). Census data and other publicly available national statistics also contain uncertainty and error, particularly regarding incomplete surveys and human data processing errors and such uncertainty is rarely accounted for by the receivers of the information who according to Manski (2014) can uncritically regard it as fact.

3.7.3.3.3: Uncertainty weighting

Such issues were taken into consideration when analysing data obtained from the St Augustine Education City by applying an uncertainty weighting (see table 12.1) to each piece of data being analysed. This helped filter influential characteristics highlighted from community responses to

reliable data sets for analysis. The uncertainty weighting ensured a consistent measurement of source reliability and data uncertainty which were categorised as high, medium, and low.

Table 3.1: Uncertainty weighting

	High	Medium	Low
Source Reliability	A	B	C
Uncertainty	3	2	1

High source reliability refers to data in which the source is considered reliable and where few if any opportunities for uncertainty are identified. For primary data collection, this took into consideration the data collection method and its reliability in producing impactful information. To be classified as source reliability (weighting score of A), the researcher had to be confident that there was no other method suitable for obtaining reliable information. For secondary data collection of publicly available data, high source reliability categorised data which came from reliable sources only. Police recorded crime data was naturally classified as low source reliability due to known uncertainties regarding corruption and mal practice as discussed. Census data was considered by a number of sources including the British High Commission to be reliable, however the data obtained from the census was less impactful due to aggregation and scale. The analysis of the study area required more localised data rather than aggregated to municipality level, although estimates were calculated based on the geographic scale of municipalities and the proportion of the study area. Medium and low source reliability were classified under the same conditions accordingly.

High data uncertainty regarding primary data collection related to technicalities of the data collection method i.e. location, time series, phenomena under observation, recording of observations, instruments and software used to obtain data such as GPS tracking devices etc. as well as potential uncertainty in the researcher's interpretation of observed phenomena. High data uncertainty regarding police recorded crime and other publicly available data related to accuracy of data recording, human error, missing data, data recording practice e.g. spatial data etc. and so on.

3.7.3.4: Summary of Social Context analysis methodology

Whilst the technicalities of the data collection process and uncertainty weighting are not considered important in terms of being incorporated in the reporting of this PhD research due to factors mentioned at the beginning of this section of the methodology chapter, it was important to make the reader aware that the researcher had considered all aspects of uncertainty and reliability of the methods employed for data collection. It was also considered important that the researcher fully explained the position of context analysis in this PhD and that this would not form a part of the thesis in terms of discussing the process and results of the data collection. The researcher was confident that the information provided to professionals was collected to the highest quality possible; although the validity of the information provided was not necessarily an influencing factor to its impact on professionals.

The data obtained for the analysis of social context was guided entirely by the community responses during focus groups conducted in chapter 11 and was filtered based on its perceived impact on informed decision making for CPTED (See Appendix I). As discussed in chapter eleven, features which were considered to be directly related to CPTED planning took priority in the data collection protocol whereas features indirectly related to CPTED were used only to provide further context or identify potential barriers to CPTED being effective. For example, communities highlighted that lighting in the study area increased fear and caused people to avoid public spaces after dark. This was considered a characteristic of the environment which directly related to CPTED planning since planning decisions could be amended to reduce this issue. Data which had potential to restrict effective CPTED planning were for example, police patrol which was beyond the remit of TCPD in terms of reducing the identified issues. If police patrol was considered inadequate, this may impact community's likelihood of reporting offences which in turn would limit CPTED efforts.

Characteristics considered least impactful to professionals, but may provide additional context are data such as crime locations which may indicate the extent of a problem already highlighted by communities.

The information generated from this section of the research was provided to professionals with the sole purpose of assessing the impact that information has on their understanding of CPTED and their ability to make informed decisions. The impact of this information provision is discussed in depth in chapter 12. The position of context analysis in this thesis was therefore not to analyse crime in the study area, nor to impose an analytical methodology for doing so; but rather to provide a medium for exploring changes in professionals understanding and interpretation of CPTED so that rethinking the basis for considering CPTED can be justified and evidenced.

3.8: Part E Section 1: Testing the impact of social context on communication and application barriers

The aim of Part E Section 1 is to assess changes in professionals understanding of and ability to make informed decisions for CPTED following provision of contextual information on the social context of crime.

The hypothesis is that provision of contextual information on crime risk in the study area helps professionals make informed decisions for CPTED planning

The methodology adopted for this phase also used grounded theory to replicate the methods from phase one with the addition of a summary of context information as an influencing variable. The aim here was to evaluate how the context information has impacted the informed decision making of planning professionals when considering the CPTED framework

The method used is Focus Groups with built environment professionals

Focus groups in Part E Section 1 are a vital part of this PhD thesis since they ultimately provide insight to the impact of social context provision on professionals' ability to interpret and apply CPTED. Focus groups in this section will replicate the same method used in Part D Section 1 which evaluated professionals' understanding of the CPTED framework to assess any changes in their interpretation of language or barriers to practical application.

3.8.1: Research Approach

The focus groups conducted in this section replicated those that were carried out in Part D: Section 1 (See chapter 10). The focus groups used the same three independent organisations (TCPD, Openplan and DOCG), each consisted of between 4-15 participants. The duration of the focus groups lasted approximately 2 hours and the objective was to explore if professionals understanding and ability to apply CPTED had changed following the provision of social context information. During this process, participants commented on the value of social context information in helping them to understand and apply the CPTED framework on a site specific basis which was used as evidence. Again, the researcher remained objective in this process, avoiding any influence upon the research participants throughout the discussion.

The analytical process for this chapter followed the same process as Part D: Section 1 (Chapter 10). It utilised a systematic thematic coding process where the discourse was categorised into categories and sub categories. Whilst the same categories were used in both professional focus group analysis, the researcher remained open to new categories emerging in the focus groups that were conducted after context information had been provided. The context of the quotes extracted for analysis was always considered during the extraction process to ensure that its latent meaning was not lost.

3.9: Ethics

This PhD strived to uphold the highest standards of ethical practice in research and academic integrity. It is therefore driven by the ethical imperative of respect, the intent to do no harm and to contribute to new knowledge through research that has good intent. The research abides by the university's ethical code of conduct in which the following key elements are promoted:

- Respect for the dignity, rights, safety and well-being of participants and researchers
- Valuing diversity in society
- Personal and scientific integrity
- Leadership
- Honesty

- Accountability
- Openness
- Clear and supportive management

3.9.1: Informed consent

This PhD conducted fieldwork in four distinct sections which involved human participants. Section 1 (chapter ten) engaged with professionals in built environment fields, Section 2 engaged with community residents, Section 3 collected data from the public environment through observations and secondary data collection through ethnographic research methods, and Section 4 repeated engagement with professionals in the built environment field. All direct engagement with human participants required informed consent to take part in the research. This is a core principle of ethical code of conduct and is included in the Economic and Social Research Council's Research Ethics Framework. Actions taken to ensure that informed consent meets the required standards included informing participants about the purpose, methods and use of the research, what their participation entails, identification of any risks posed to the participants and clearly stating that their participation is voluntary and anonymous. This was important for respecting the autonomy of participants and to protect them from harm. Consent forms were signed by all participants involved in the research across the three sections of fieldwork which directly involved human participants.

With regards to the field observations, it was inappropriate to gain written consent from individuals as the focus of the observations was not on specific individuals. Individuals were not impacted in any way by the research. Gaining informed consent may also have potentially damaging effects on the research. It may change the behaviour of the phenomenon being studied (e.g. car traffic, human interaction etc.) Also studying large populations (as in the case of this research) made it impractical to gain written consent.

3.9.2: Data protection

This research maintains the highest standard of academic practice when accessing and using information and insight from participants. The processing of data is in compliance with the principles of the Data Protection Act (1998), namely that personal data should only be collected, recorded and processed with permission of the individual, for the purpose of which permission is granted, and retained for as long as necessary to execute that purpose. No identifying information was obtained from participants in this respect other than video recordings which were agreed to be destroyed following completion of the research. All reporting of information in this thesis and any subsequent publications is entirely anonymous. Consent was granted by all participants on this basis. Storage of video recordings was secure on a personal laptop with password only access.

3.9.3: Ethical approval

All fieldwork involving human participants was accompanied by an ethical risk status determined by the university. The research was categorised as Amber since it involved human participants which had the risk in some aspects of discussing potentially sensitive topics relating to crime and victimisation (although this was not the focus of the engagement). In order to mitigate these risks, a robust focus group template was followed so to ensure that discussions remained focused on the objectives of the research at all times.

This chapter has reported on the broad philosophical foundations of this PhD and briefly introduced the methods employed for each section which will be discussed in further detail throughout the thesis. The next chapter will discuss the first analytical stage of exploring the CPTED knowledgebase and analysing the integrity of key issues identified in the field.

Part A

CHAPTER 4: *Mapping CPTED Criticisms*

Findings from the literature review in chapter two highlighted a number of important issues within the CPTED field. Due to their high volume it was an unrealistic task to explore each problem in this PhD thesis, therefore further research was needed to understand the strength of the criticisms made by academics in the field and ranking them in priority order. This ensured that the criticisms selected for further analysis in this PhD were thoroughly investigated and their frequency in academic material was not biased or duplicated by repeated sources.

The objective of Part A was to critically explore the CPTED knowledgebase and analyse the merit of its main criticisms through a robust systematic methodology. This chapter therefore questions,

- what are the key criticisms underlying the CPTED concept?
- which are most pertinent to improve the application of the CPTED concept and for further exploration in this research?

In order to do this, a Directed Content Analysis was adopted as discussed in section two of chapter three. Actor Network Theory (ANT) was employed as a theoretical framework for thinking about the CPTED research network and exploring variables for analysis.

Kaid (1989) proposes seven definitive steps within the analytical process of qualitative content analysis; these include:

- 1) formulating the research questions
- 2) selecting a sample to be analysed
- 3) defining categories
- 4) outlining the coding process
- 5) implementing the coding process
- 6) determining the trustworthiness of the process
- 7) analysing the results.

Although this is a coherent process to follow, the content analysis depends entirely on the reliability of the process involved for coding and categorising the material. The categories developed must ensure the ability to organise large amounts of text into small categories which will then reveal patterns or themes derived through the analysis (Weber 1990).

When outlining the coding process, Weber (1990) suggests eight steps in creating and testing the coding scheme.

Step one is *defining the recording units*. This entails six commonly used options:

- * *Word*: Code each word; this must be done manually as computer programmes may not recognise different senses of the word.
- * *Word Sense*: Code the different senses of the word with multiple meanings and code phrases that constitute semantic units such as idioms or proper nouns.
- * *Sentence*: An entire sentence is the recording unit and words or phrases are analysed that occur closely together.
- * *Theme*: The unit of text 'having more than one, perceiver, perceived agent or action, action or target of action (Holsti 1963).
- * *Paragraph*: Coding of entire paragraphs to reduce the effort required.
- * *Whole text*: Reliability is often difficult to attain when analysing whole texts unless the document is short such as a newspaper headline.

This analysis will focus on the *sentence*, by identifying particular words within a sentence that are close together and refer to individual criticism themes in a positive, neutral or negative way. This is a very labour intensive process, however Holsti (1963; 1969) believes these intense processes form the basis of a more detailed and sophisticated comparison.

Step two is *defining the categories* which must be mutually exclusive. If data can fall within more than one category, there is the potential for multiple counting, inconsistency and false positives within the result. An alternative choice however is around the broadness or narrowness of the categories.

Many broad categories may have a lot of entries, but providing sub categories make the categories narrower and provide more detail.

Step three is to *test the code on a sample of text*. Weber (1990) believes that the best test of clarity of category definitions is to code a small sample of the text, revealing ambiguity of the rules whilst leading to insights suggesting revision of the classification scheme.

Step four is to *assess the accuracy or reliability*.

Step five is to *revise the coding*. If errors occur the coding rules must be revised.

Step six is to *return to step 3*. This cycle will continue until the researcher has achieved the highest reliability possible.

Step seven is to *code the text*. The coding rules can now be applied to the text when reliability levels are satisfactory.

Step eight is to *assess achieved reliability or accuracy* and never assume that if samples of text were coded reliably, then the remaining text will be sound. The researchers understanding of the codes may change in subtle ways during the process, leading to greater unreliability.

This process was followed during the coding system with a sample of literature extracted and analysed to ensure reliability and accuracy.

4.1: Literature Scope

A literature search is an essential part of all research projects. Many form the basis of large scale reviews in which they require all relevant literature to review the topic area as a whole, whilst reflecting on the methodology and data usage. The literature search used for this stage of the thesis is essentially for data extraction, although it follows the same search process as a basic literature review, strict inclusion and exclusion criteria are later applied.

Prior to the search strategy, an initial scoping exercise was used to establish if this method had been applied previously to explore the integrity of CPTED criticisms. This entailed a list of key phrases to identify potential literature which may duplicate the aims of this study. Phrases used to identify similar studies included:

‘Critical review of Crime Prevention Through Environmental Design/CPTED’

‘Critical evaluation of Crime Prevention Through Environmental Design/ CPTED’

‘Critical examination of Crime Prevention Through Environmental Design/ CPTED’

‘Directed Content Analysis of Crime Prevention Through Environmental Design/ CPTED’

‘Content Analysis of Crime Prevention Through Environmental Design/ CPTED’

‘Crime Prevention Through Environmental Design / CPTED Criticisms’

‘Critical review of Secured by Design/SBD’

‘Critical evaluation of Secured by Design/SBD’

‘Critical examination of Secured by Design/SBD’

‘Directed Content Analysis of Secured by Design/SBD’

‘Secured by Design/SBD Criticisms’

‘Critical review of Defensible Space’

‘Critical evaluation of Defensible Space’

‘Critical examination of Defensible Space’

‘Directed Content Analysis of Defensible Space’

‘Defensible Space Criticisms’

Secured by Design (SBD) was included in these key phrases to rule out the chance of missing any literature. This was based on the decision that Secured by Design principles derives from the work of Newman (1972) and Jeffery (1971). Any potential hits for SBD were planned to be thoroughly reviewed to establish the author’s perception and their acknowledgement of CPTED. It must also be noted that during the literature scoping process, hits were retrieved which evaluated Oscar Newman’s

(1972) Defensible Space. It was therefore decided to include these hits in the scoping exercise since the CPTED concept is strongly referenced to Newman's Defensible Space model. This particularly relates to the concept of Territoriality (Poyner 1983; Sorensen et al 2008) and therefore any criticisms which apply to Defensible Space, essentially apply to CPTED. Table 4.1 provides an example of some of the search engines used to access documents used in the analysis.

Table 4.1: Literature search engines

Electronic Databases	JSTOR Social Science Citation Index SSRRN- Social Science Research Resource Network Springerlink Web of knowledge Web of science WorldCat WorldWideScience ProQuest Research Library
Core Bibliographic Databases	IBSS (International Bibliography of the Social Sciences) IBR (International Bibliography of Book Reviews) National Criminal Justice Reference Service
Internet Searches	Google Google scholar The CPTED page (http://www.thecptedpage.wsu.edu) ICA- The International CPTED Association (http://www.cpted.net) The Home Office (http://homeoffice.gov.uk/crime) Design Out Crime Association (http://designoutcrime.org)
Other databases and research registers	CINCH (Australian Criminology Database) ETHOS (Electronic Thesis Online System) Academic Search Premier EUCPN (European Crime Prevention Network) The Campbell Collaboration Situational Crime Prevention Evaluation Database (Centre for Problem Oriented Policing)

The results retrieved nine relevant articles which had set out to solely analyse the criticisms of CPTED. The methodologies and data usage was analysed in depth, showing three documents to be empirical studies directly testing the effectiveness of CPTED. These were excluded on the basis that the aim of this section of the research was to evaluate the criticisms of CPTED, and not CPTED itself. For the remaining hits, 5 out of 9 articles did provide a review but used a basic literature review with no detail about the data used or evidence of a systematic analytical process. The remaining study did evidence content analysis, but in the form of discourse analysis and was not directly linked to the criticisms of CPTED, but rather an analysis of how fear and violence discourse legitimates exclusion strategies and residential segregation. It was therefore confirmed that there are no previous studies

that have carried out a directed content analysis to evaluate the justification and integrity of CPTED criticisms.

4.1.1: Literature search

Following the confirmatory scoping, a main literary search was carried out to retrieve every published, publically available document on CPTED. A further set of key terms were used in the databases listed in Table 4.1 with additional sources for a more detailed search. To search for studies relevant to this analysis, the following thesaurus of terms was applied utilising wildcards (*) to represent a number of word variations; Boolean ('and', 'or', 'and not') for more specific requirements and Quotes ('') to define the use of phrases. Table 4.2 sets out key words, journals and authors which were targeted in the literature search. Key authors and journals were identified from the researcher's prior knowledge from the literature review and were therefore considered important for further direct exploration.

Table 4.2: Key words

Key words	CPTED, 'Crime Prevention Through Environmental Design', Evaluat*, Gap, Limit*, 'Secured by Design', SBD, Critic*, Review, 'Design against Crime', 'Defensible Space', 'Crime Prevention', Situation*, Examination
Key Journals *NOTE: these are not exhaustive	Criminology; The CPTED Journal; Environment and Behaviour; Crime Prevention and Community Safety: An International Journal; Crime Prevention Studies (all volumes); Journal of Research in Crime and Delinquency; Built Environment; Journal of Criminal Law, Criminology and Police Science; European Journal of Criminal Policy Research; International Journal of Sustainable Development Planning; Security Journal
Key Authors * NOTE: These are not exhaustive (home pages, websites, social networking sites)	Jane Jacobs; C. Ray Jeffery; Oscar Newman; Brantingham & Brantingham; Ronald Clarke; Lawrence Cohen; Marcus Felson; Rachel Armitage; Paul Cozens; Paul Ekblom; Gregory Saville; Gerry Cleveland; Danielle Reynald; Paul van Soomeren; Randal Atlas; Tinus Kruger; Macarena Rau Vargas

The results of this broad literary search retrieved 423 hits for CPTED related literature. Because this study aimed to extract and evaluate the criticisms of CPTED, a strict but very broad inclusion and exclusion criteria was applied to ensure all literature was relevant for the research questions. Before these criteria were applied, the bibliographies of all 423 hits were manually searched to highlight any literature missed from the initial search process. RSS feeds and email alerts were also set up to ensure the literature sample was kept up to date throughout the analysis process which took several months.

At the beginning of a large scale systematic review, the discussion and development of inclusion and exclusion criteria is carried out to fit with the review question and objectives. Systematic reviews can exclude studies if they fail to conform to certain study designs, the language they are presented in, or within certain time frames to make the sample they use applicable to the anticipated aim of the project.

The inclusion and exclusion criteria are set out in Table 4.3. The final decisions were made by analysing the title and abstract of the article, and those clearly irrelevant were excluded at that stage. For the remaining articles which passed the inclusion criteria, full texts were obtained and the text was fully read with the criteria applied again. Some articles were further excluded at this stage.

Table 4.3: Inclusion and Exclusion Criteria

Parameters	Inclusion Criteria	Exclusion Criteria
Location	Worldwide	-
Language	Studies written in English	Studies not written in English
Time Frame	Studies published from 1970 (inclusive) – 2014 (when the analysis was complete)	Studies published before 1970
Study Type	Qualitative and Quantitative Critical theme	Non critical acceptances
Source	Textbooks Journal Articles Peer reviewed articles	Second Generation CPTED studies

It must be stressed that the inclusion and exclusion criteria remained very broad throughout the initial search for the DCA literature sample, due to the variations of literature which could evidence

criticisms of CPTED. It was therefore important that no documents were missed since the sample aimed to be as representative as systems would allow.

The search results revealed 154 documents in total which were published between 1972-present and aligned with the inclusion criteria (See Appendix A). This sample contained a variety of journal articles, conference papers, magazine articles and government reports; it is therefore considered a representative subset of all CPTED literature.

4.2: Actor Network Theory

The purpose of this research is to extract and analyse the networks behind all CPTED criticisms. Data would then be analysed to identify relationships and drivers behind the literature to influence the measure of the integrity of each criticism. Most content analysis results are ordered based on the frequency of the categories or themes emerging from the text being analysed. However, this research would not allow frequency alone to be a variable for measurement due to complex relationships between authors, institutions, and disciplines etc. therefore risking bias within the frequency of criticisms. Actor Network Theory (ANT) was therefore applied in principle to direct the Content Analysis method to form a systematic categorisation and analytical process. The variables for analysis were chosen by the researcher since there were no studies to date which have utilised ANT to explore literature in this way. Table 4.4 in the *theme* column sets out the variables which were considered important by the researcher for exploring bias in the frequency of criticisms extracted from the literature.

The main category being analysed was ‘Criticisms’, with several sub categories within; using sentences as the recording units as mentioned earlier. The remaining categories as variables for exploring the research network are detailed in table 4.4, some of which contain sub categories.

Table 4.4: DCA Categories

Theme	Category	Sub category
Criticisms	Work Effort	Poor Communication and Collaboration between CPTED Stakeholders
		Practitioners assume One-Size-Fits-All
		Implementation takes a top down approach
	Need For Further Research	Personal Capable Guardianship is dependent on wider conditions
		Poor Evaluation and Measurement
		Lack of Social Aspects
	Negative Effects	CPTED creates a Fortress Society
		Offensible Space
		Increasing public use increases crime
		CPTED is not sustainable
		Displacement
	Weak empirical evidence	Methodological Weaknesses
		Narrow range of tested scales
		Conflicting principles
Authors		
Methodology		
Paper Discipline	Social Science	Sociology/ Anthropology
		Criminology
		Geography/Criminology
		Criminology/Sociology
		Political Science
		Psychology
		Environmental Criminology
		Criminology/ Environmental Resource
		Management
		Psychology/Criminology
		Sociology/Anthropology

		<i>Anthropology</i>
		<i>Sociology</i>
		<i>Geography</i>
		<i>Criminal Psychology</i>
		<i>Psychiatry</i>
		<i>Community Engagement/ Waste and</i>
		<i>Resource Management</i>
		<i>Housing</i>
		<i>Public Affairs/ Sociology</i>
		<i>Security</i>
		<i>Social Psychology</i>
		<i>Political Science/ Geography/ Sociology</i>
		<i>Environmental Criminology/ Criminology</i>
		<i>Psychology/Political Science</i>
		<i>Sociology/Criminology/Geography</i>
		<i>Politics</i>
		<i>Environmental Criminology/</i>
		<i>Criminology/ Geography</i>
		<i>Sociology of Law/ Criminology</i>
		<i>Public Policy Affairs</i>
	Professions and applied sciences	<i>Urban Planning</i>
		<i>Police Practice</i>
		<i>Architecture/ Territory Planning</i>
		<i>Planning</i>
		<i>Community and Regional Planning</i>
		<i>Safety and Security Practice</i>
		<i>Planning and Urban Regeneration</i>
		<i>Urban and regional planning</i>
		<i>Police Analyst/ Health Service</i>

		<i>Architecture/ Law</i>
		<i>Architecture</i>
		<i>Manufacturing Practitioner</i>
		<i>Security practitioner</i>
		<i>Architectural and Urban Morphology</i>
		<i>Urban and Regional Studies</i>
		<i>Law</i>
		<i>Housing and Urban Development</i>
		<i>Planning /Environmental Criminology</i>
		<i>Criminology/ Urban Planning</i>
		<i>Urban Design</i>
		<i>Housing and Urban Development</i>
		<i>Landscape Architecture</i>
	Social and applied sciences	<i>Psychology/ Crime Science</i>
		<i>Criminology/ Crime Science</i>
	Applied Science	<i>Applied Criminology</i>
		<i>Human Factors Management</i>
		<i>Urban and Regional Affairs</i>
		<i>Crime and Law Enforcement</i>
		<i>Crime Science</i>
		<i>Government and Justice</i>
		<i>Forensic Psychology</i>
		<i>Police Sciences</i>
	Formal Science	<i>Computing</i>
	Professions and applied social science	<i>Psychology/ Design/ Medicine</i>
		<i>Criminology/ Planning</i>
		<i>Psychology/ Psychology/ Engineering</i>
		<i>Architecture/ Criminology</i>
		<i>Architecture/ Security</i>
		<i>Law/ Sociology/ Psychology</i>
		<i>Planning/ Sociology</i>
		<i>Environmental Criminology/ Business/ Urban Geography</i>

	Professions and applied/Social/Natural Science	<i>Criminal Justice/ Psychology/ Medicine</i>
	Professions and applied/Social Science/Humanities	<i>Geography/ Town Planning/ History</i>
Author Perception		
Author	Criminology	
Discipline	Psychology	
	Sociology	
	Planning	
	Architecture	
	Crime Prevention	
	Political Science	
	Geography	
	Law	
	Criminal Justice	
	Housing and Urban Development	
	Computing	
	Medicine	
	Waste and Resource Management	
	Urban and Regional Studies	
	Health	
	Public Affairs	
	Psychiatry	
	Government and Justice	
	Occupational and Environmental Health	
	Sociology of Law	
	Epidemiology	
	Education	
	Design	
	Community Engagement	
	Business	
	Anthropology	

	Community and Regional Planning Human Development and Social Policy Environmental Resource Management Computing Human Factors Management
Data	
Scale	- Micro - Meso - Macro - Multi Scale
Type	- Academic - Practice
Place of Study	
Place of Authors	
No of Citations	

The list of categories in table 4.4, particularly in relation to paper and author disciplines may seem repetitive; however, duplication is based on the combination of disciplinary positions the paper presents. For example, one paper may feature authors from Criminology and Sociology disciplines, yet another paper may feature authors from Criminology and Geography disciplines. Although Criminology is represented twice here in the Social Science category, this needs to be represented in two different sub categories due to the different combinations within the document being analysed. This forms another category since there are a number of documents that feature Criminology and Sociology disciplinary positions, and a number of documents that feature Criminology and Geography disciplines and are therefore grouped with a new category being formed. There are also a number of documents featuring these disciplines singularly and therefore would be represented alone as a sub category, for example Criminology.

Within the criticisms theme there are several categories which perhaps require some explanation; these are detailed in Table 4.5 below.

Table 4.5: Criticism Category and contexts

Criticism Category	Sub Category	Sub Category Context
Work Effort	Poor Communication/ Collaboration between Stakeholders	This emerged from attitudes relating to the working relationships between all stakeholders of CPTED. This includes Architectural Liaison Officers (ALO's), Planners, Architects, Designers, The Government, Councils, Local Authorities, Police and more. It relates to the diversity of knowledge and understanding surrounding the CPTED arena, conflicting attitudes and assumptions, poor collaboration, reluctance to engage, ignorance to the benefits of the concept etc (See Reppetto 1976; Bickman et al 1978; Sarkissian 1989; Atlas 1995; Ekblom 1997; Crowe 2000; Olasky 2004; Ekblom 2009; Ekblom 2011b).
	One Size Fits All	Came from the assumption that CPTED follows strict design guidelines that are applicable to all areas without any consideration to the different contexts with which it is applied. This is therefore ignorance on the practitioner's behalf for failing to consider more context specific approaches to designing out crime, or ignorance on academia's behalf for failing to collaborate with broader social science disciplines to integrate such factors into the design concept (See Brown & Altman 1981; Normoyle & Foley 1988; Poyner 1991; Nubani & Wineman 2008)
	Top Down Approach	'Top down approach' relates to the tactical approach taken by practitioners when implementing CPTED. Some criticise CPTED for failing to engage with communities at an early stage of the planning process and working bottom up. This is often known seen to cause conflict and opposition by local residents which will ultimately hinder the effects of CPTED as a whole (See Bell & Young 1978; Appleyard 1979; Grohe 2011).
Need for further research	Concepts are dependent on wider conditions	This relates to the assumption that the expectation of CPTED designs to encourage residents to engage with their environment is unrealistic and further research is required to establish this assumption. There is often a consensus that there are wider conditions which encourage or restrict the willingness to engage (See Desyllas et al 2003; Reynald 2009, 2010; Peel et al 2012).
	Poor Evaluation and Measurement	This relates to problems people have encountered about measuring the effects of CPTED. It is argued that there is no holistic measurement tool available and therefore unable to measure the true effectiveness of the concept (See Casteel & Peek-Asa 2000; Atlas 2002), and those methods that have been identified provide little explanation as to why they have been successful or unsuccessful (See Teedon et al 2010). This has been identified by the researcher as a huge research gap within the field.
	Lack of social context	This relates strongly to 'Assumes One Size Fits All'; however the researcher interpreted the tone of the argument to be targeted from a different angle. 'Assumes One Size Fits All', as mentioned earlier is concerned with the need for more context specific approaches to CPTED, which will be based on the social make-up of the area. This demonstrates a reluctance to

		consider these dimensions of CPTED, yet 'Lack of Social Aspects' goes a level deeper than that, by assuming that there is actually a lack of knowledge surrounding the social dimension of CPTED and how these can be integrated into such a design oriented framework. It is therefore anticipated that this criticism highlights the need for further research, and that a 'One Size Fits All' attitude is the result of knowledge deficiency in this area.
Negative effects	Fortress Society	This highlights the notion that certain design concepts such as Target Hardening and Access Control, actually cause communities to segregate by keeping offenders out. This is evidenced by the use of high walls, spikes, high gates, guard dogs etc, which create an urban fortress and leave public space abandoned (See Dillon 1994; Tijerino 1998; Le Goix 2005; Landman & Libermann 2005; Landman 2008)
	Offensible Space	This relates to a straight forward assumption that CPTED has the ability to allow criminals to use CPTED designs to enhance their criminal networks (See Atlas 1990; 1991; 2003).
	Increasing public use increases crime	This relates to the idea that by encouraging residents to use public space and engage in activities, this increases crime opportunities due to increased population and therefore potential targets. The studies which have made this assumption discuss that cohesion is not increased by people using public space, there is also a focus on the positioning of schools and shops and how these increase permeability and flows of people coming in and out of the area (See Roncek & Lobosco 1983; Perkins et al 1993; Wilcox et al 2004; Hin Li 2008).
	Unsustainable	This relates to the idea that many cases where CPTED has been implemented, crime reduction effects have been unsustainable (Kushmuk and Whitmore 1981). It has also been suggested that there is no formalised relationship between CPTED and sustainability although the mutual benefits are clear (Cozens 2002) and that there is a lack of formally integrated crime prevention consideration within sustainable development practice (Cozens 2007; Cozens 2008; Poulson 2013)
	Displacement	Displacement is a well-known criticism within the crime prevention arena relates to the assumption that when implementing CPTED to an area, there will be a spatial or temporal displacement in crime; the possibility of crime type displacement may also appear (Mayhew 1979; Cozens 2002; Cozens 2004).
Weak Empirical Evidence	Methodological weaknesses	This derived from the early developmental work of Oscar Newman and others which has been dubbed for methodological weaknesses. Also the limited results which provide the basis to some of the main inferences within the concept have therefore left it impractical (see Stanley 1977; Bottoms 1973; Roncek 1975; Wallis & Ford 1980).
	Narrow range of tested scales	This is fairly informative, in that CPTED has been criticised to only operate on a narrow continuum of scales and the evidence provided for other scales is minimal (See Titus 1977; Jusiewicz 2011; Minnery & Lim 2005).

	Conflicting principles	This relates to assumptions that the principles of CPTED conflict in practice and that one design can hinder the other (See Rogers 2007; Reynald 2011; Ekblom 2011b)
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The content analysis process was dependent on the researcher's interpretation of text into categories. Although the main criticism categories were pre-determined as being drawn from the substantial literature review, the formation of sub-categories emerged during the analytical process so to reduce bias and allow the grouping of texts to naturally occur based on its content.

Table 4.6 examples a list of typical terms, phrases and themes which guided the researcher's assumption towards the chosen criticism category and sub category. The researcher also ensured that the meaning of the phrase or term extracted was appropriate to its context by reading the entire document or section before extraction of key sentences. In instances where phrases may not appear to be a negative comment, the wider context of the document in relation to the extracted statements confirmed their critical position.

Table 4.6: Example of sentences used for work effort categorisation

Work Effort		
Poor communication/ collaboration between stakeholders	Practitioners assume One Size Fits All	Implementation takes a Top Down Approach
<p>'Planners need more effective guidance'</p> <p>'...arguments occur with developers about its relevance or applicability'</p> <p>'It is time that planners consider how CPTED guidelines may be used'</p> <p>'the field of CPTED is littered with frustrating contradictions of key terms'</p>	<p>'Individual and communal territoriality styles are unlikely to coexist'</p> <p>'Defensible Space efforts in practice assume one size fits all'</p> <p>'Many people continue to consider design checklists and one-size-fits-all prescriptions as best practice'</p>	<p>'Opposed by local residents'</p> <p>'Resented by residents'</p> <p>'Lack of community involvement'</p> <p>'Neighbourhood perceptions need to be taken into account'</p>

<p>‘Police are not routinely involved in the decision making’</p> <p>‘State and local governments are reluctant to require CPTED assessment’</p> <p>‘bureaucratic resistance to change’</p> <p>‘low levels of CPTED knowledge outside of police agencies’</p> <p>‘There is a need for better engagement’</p> <p>‘leaving practitioners with little clear guidance as to how to design out crime in practice’</p>		
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Table 4.7: Examples of sentences used for Need for Further Research categorisation

Need for Further Research		
Personal Capable Guardianship is dependent on wider conditions	Poor Evaluation and Measurement	Lack of Social Aspects
<p>‘differential willingness to cooperate in providing surveillance’</p> <p>‘Opportunities do not automatically mean residents will supervise their surroundings’</p> <p>‘Citizens rarely participate in access control, surveillance or territorial behaviours’</p>	<p>‘do not examine how or why the opportunity for crime occur’</p> <p>‘CPTED is difficult to measure’</p> <p>‘Lack of systematic testing and evaluation projects’</p> <p>‘Little knowledge on which CPTED components are most effective’</p>	<p>‘Ignores the social aspects of the milieu’</p> <p>‘Does not attack root causes of crime’</p> <p>‘ignores a whole other dimension’</p> <p>‘only focuses on the external environment of the offender’</p> <p>‘internal environment of the individual is neglected’</p>

<p>‘No evidence suggests that residents to engage in natural surveillance or bystander intervention’</p> <p>‘CPTED is ineffective in areas without social any cohesion’</p>		<p>‘Guardianship is effected by contextual factors and has not been appropriately considered in past research’</p>
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Table 4.8: Example of sentences used for Negative Effects categorisation

Negative Effects				
CPTED creates a Fortress Society	Offensible Space	Increasing public use increases crime	CPTED is not sustainable	Displacement
<p>‘Gated enclaves’</p> <p>‘Public spaces are privatised’</p> <p>‘Fortification and segregation’</p> <p>‘target hardening focused’</p> <p>‘can create fortress mentality’</p>	<p>‘designs are criminogenic’</p> <p>‘Criminals have turned the defensible space notion of CPTED on its head’</p> <p>‘Criminals understand CPTED principles’</p> <p>‘Social Cohesion can enhance criminal networks’</p> <p>‘Criminals have successfully used the principles of CPTED’</p>	<p>‘Activities in residential areas increase vulnerability’</p> <p>‘Schools attract people and increase crime opportunities’</p> <p>‘Increasing social activity in public spaces increases crime’</p> <p>‘Increased land use increases physical disorder’</p>	<p>‘Positive effects of CPTED rarely sustain’</p> <p>‘the repetition of unsustainable design features is unavoidable’</p> <p>‘Decline of estates over time’</p>	<p>‘Displacement occurs’</p> <p>‘Create displacement to nearby neighbourhoods’</p> <p>‘Shift in prevalence of offence type’</p>

	'Criminal hotspots have mastered the CPTED principles'			
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Table 4.9: Example of sentences used for Methodological Weaknesses categorisation

Methodological Weaknesses		
Weak empirical evidence	Narrow range of tested scales	Conflicting principles
'There is no clear evidence' 'More meaningful data is needed' 'Problems with methodology and statistical validity' 'unrealistic' 'no direct correlation' 'error' 'uncertainty'	'Principles are appropriate to only one physical scale' 'Only supported at street block or housing project scale' 'too 'resident' centred' 'Only applied to single sites/systems'	'CPTED principles are conflicting' 'Dimensions of territoriality conflict' 'Set against other design principles'

Based upon this basic assessment, Table 4.10 highlights the frequency of criticisms within the documents analysed.

Table 4.10: Frequency of Criticisms and Sub Categories

Criticism Category	Criticism	Count	Count
Work Effort	Poor Communication and Collaboration between stakeholders	49	36
	Assumes one size fits all		10
	Top Down Approach		3

Need for further research	Personal Capable Guardianship is dependent on wider conditions	39	10
	Poor Evaluation and Measurement		8
	Lack of Social Aspects		21
Negative Effects	CPTED creates a Fortress Society	33	14
	Offensible Space		7
	Increasing public use increases crime		6
	CPTED is not sustainable		3
	Displacement		3
Methodological Weaknesses	Weak empirical evidence	15	7
	Narrow range of tested scales		6
	Conflicting principles		2

Frequency becomes a simple aggregated count of articles published which can become a simple measure of the time available to certain academics to publish. Aggregated counts therefore lose detail and cannot be used as a measure of importance. Data for the remaining categories was extracted using the same methodological process, directed by Actor Network Theory. ANT evidences techniques which assist academics in uncovering the social construction of truth. It questions how interactions between actors are formed into representations of reality; this reality can develop in other contexts with their truth value intact (Gershon & Malitsky 2010). It is therefore essential to question how these actants contribute to shaping a network through such interactions. Networks were analysed through data collected from the DCA categories based on the author location, the papers disciplinary position, method and scale used, the place of study and the paper's disciplinary background which were considered by the researcher to be factors which may potentially influence the bias of literature in the field. The aim was to reveal biased or confirm unbiased relationships amongst the network in order to accept or refute the criticisms proposed.

4.2: Graph Visualisation and Manipulation Theory

In order to visualise the network of academic literature, graph visualisation and manipulation software was utilised. The visualisation of large graphs with the aim of understanding the networks within

them has been successful in many projects (Batagelj 1998; Shannon 2003; Adar 2006). An open source network exploration software (Gephi) was used to import, spatialise, filter and manipulate the network data from the literature sample using graph theory. It provides different layout algorithms, data filtering, clustering and statistical tests to enhance the analytical accuracy.

The data was formatted so that all authors and papers within the dataset were represented as individual *nodes*; each *node* was assigned a code and connections could then be visualised through the representation of *edges*.

A network is made up of a set of nodes (or actors) together with a set of ties which link them together (edges). In communication networks, nodes represent a point of connection. In the case of this network, each node has several attributes within it which can be filtered depending on the relationships you are trying to reveal. Each author will be connected to one or more documents to initially reveal communities of authorship. An edge is drawn as a line connecting two nodes; these connections are based upon codes, manually joined by the researcher. The relationships and networks which emerge from the data are highly dependent on network theories.

Interest in social networks spans across all of the social sciences, becoming significantly more popular over time (Borgatti & Halgin 2011). Brass (2002) argues that network theory is about the consequences of the variables within a network; for example, having a centrally located network, or a network with too many ties. The issue of network properties is also central to Brass's (2002) premise. This includes models of relationship characteristics in which the actor becomes central within a network and what characteristics the network has as a whole, e.g. centralisation or small world tendencies; much of the theoretical wealth of network analysis is based on these structures and node positions.

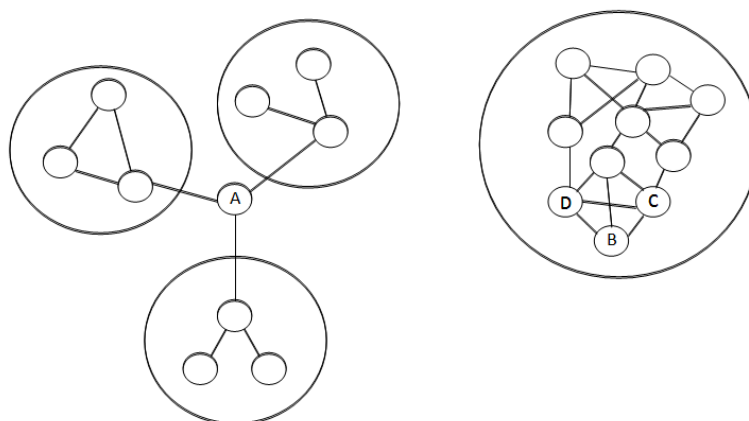
Small world tendencies are closely linked to Granovetter's (1973) Strength of Weak Ties theory (SWT). His premise is that the stronger the tie between two people, the more likely that their social worlds will overlap and share ties with the same third parties. For example, in the case of this research, if author A works with author B, and author B works with author C, there is a strong chance

that author A and author C will co-author at some point, or at least be acquainted in knowledge sharing. Granovetter argues for this reason, that the underlying causes of tie formation have this transitivity built into them as a result of the homophilous nature of people (people will share stronger ties when shared interests are apparent) (Lazarsfield & Merton 1954; McPherson et al 2001).

Granovetter uses this theory to explain why people with many acquaintances (weak ties) as opposed to one or two strong ties, receive better knowledge transfer, since information will travel from further fields.

This is also strongly related to Burt's (1992) Structural Holes Theory of Social Capital. Burt argues that when comparing nodes, A and B (see figure 4.1) for example, the shape of A's network will tend to provide more novel information than the network does for B. Burt argues that although node A and B has the same amount of ties, and we can suppose they have the same strength, the information A receives will be more valuable since it is coming from various pools of information within the network who may know different things. On the other hand, node B's contacts are also connected with each other; it may therefore be that C provides the same information from D since they are within the same pocket of the network. See Figure 4.1, (adapted from Scott & Carrington 2011).

Figure 4.1: Structural Holes Theory of Social Capital



Burt and Granovetter's theories are very similar. They do however differ since Granovetter further argues that the strength of a tie determines whether or not it will serve as a bridge (an edge which

connects two networks). Burt does not refute this, since his research suggests that bridging ties are weaker since they are more subject to decay (Burt 2002; 1992). The difference therefore is based on the preference of the distal cause (strength of the tie), which Granovetter does, and the proximal cause (the bridging ties) which Burt does. Borgatti & Lopez-Kidwell (2011) argue that these differences and similarities yield an 'appealingly ironic and counterintuitive story line'. While Burt's preference 'captures the causal agent directly, it also provides a stronger foundation for theory' (Burt 1992). This however is all based on the same underlying model which Borgatti & Lopez-Kidwell (2011) argue, underlies a great deal of network theory.

There are a number of concepts and measures for basic network analysis. Networks are defined by their actors and the connections between them. The extent to which these actors are connected may indicate the level of cohesion, solidarity, and complexity of the social organisation (Burris 2005; Moody & White 2003; Schnegg 2006; Crossley 2008). Of equal importance is the size of the network, which is crucial for the structure of social relations. According to Borgatti & Lopez-Kidwell (2011), this is due to limited resources and capacities that each actor has for building and maintaining ties and that the complexity of social structures increases exponentially with size. Connections are determined by the overall size and density of the network which gives a sense of the range of possible social structures present in a network. Of importance here are the patterns of connections within these structures. Connections may not be strong even though one actor may be able to reach another. If there are a number of pathways to connect two nodes, they have high connectivity in that there are multiple ways of transferring knowledge back and forth (Burris 2005; Crossley 2008; Finsveen and van Oorschot 2008). Connectivity is measured by counting the number of nodes needed to be removed to make one node unreachable from another.

The smallest social structure within a network is called a *dyad*. This is the relationship between two individual nodes. The extent to which a network is characterised by this type of structure gives an insight to the degree of cohesion (or in this case the degree of research collaboration or co-authorship). Often there are interactions between fairly small subsets of the network. Borgatti &

Lopez-Kidwell (2011) argue that this local ‘clustering’ is often very informative and often paradoxical in large scale networks (Watts 1999).

4.3: Results

The analytical methods employed in this chapter were based on the discussed network theorising which were visually analysed using Graph Visualisation and Manipulation Software. The initial process began by analysing the temporal change in criticisms over time to establish if there were differences in disciplinary perception over time.

Figure 4.2 shows the temporal shift in criticisms within social science disciplines.

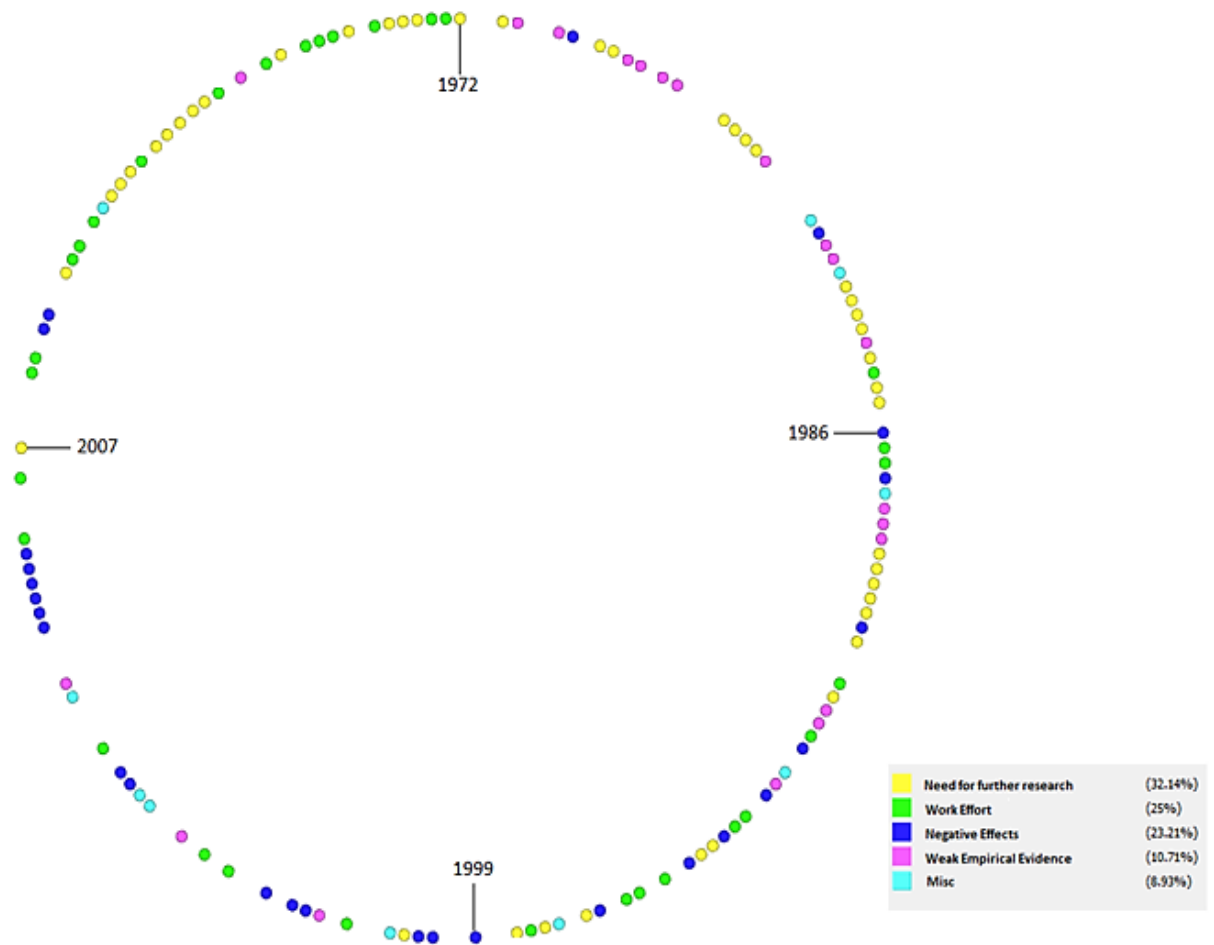
Figure 4.2: CPTED research network: Social Science

Layout Order: Date

Colour Ranking: Criticism

Type: Paper

Discipline: Social Science



This graph demonstrates a distinct temporal shift in perception within the social science discipline. Between 1972-1986 there is a clear focus on the need for further research and the recognition that CPTED has developed from a weak empirical evidence base. These criticisms were particularly associated with the fact that there were limited CPTED evaluations and the measurement of crime reduction impact was difficult (See Bottoms 1973; Hillier 1973; Reppetto 1976).

Between 1986-1999 opinions become rather mixed with substantial interest spread across the four main criticisms, perhaps with a slightly increased recognition that following more CPTED evaluations, the resulting impact on crime was not always positive. This related particularly to a growing concern that the implementation of CPTED was leading to a fortress society (See Kaplan et al 1978; Geason and Wilson 1989); that designing out crime is unsustainable (Kushmuck & Whittemore 1981; Cozens 2002; 2004) and that CPTED creates Offensible Space (Atlas 2003).

Between 1999-2007 it becomes more apparent that there are significant communication difficulties between CPTED stakeholders. This is particularly relating to the engagement of built environment professions (Feins et al 1997; Schneider 2002; Olasky 2004; Wilson & Wileman 2005), the dissemination of CPTED knowledge from academia to practice and the confusing and contradictory CPTED guidance available in the field (Ekblom 1997; Crowe 2000; Armitage 2004; Armitage 2007; Kitchen 2009; Ekblom 2011b). Another prominent issue which resurfaced in more recent decades is the need for further research; however, there is a clear shift in focus from lack of evaluation and measurement to the lack of consideration for the wider social context of crime risk and its relationship to sustainability. Recognition of this issue at this time is possibly the result of a shift in focus towards sustainable development and the inherent impact that crime has on degenerating communities (See Poulson 2013).

A distinct comparison is witnessed in the professions and applied science discipline shown below in Figure 4.3.

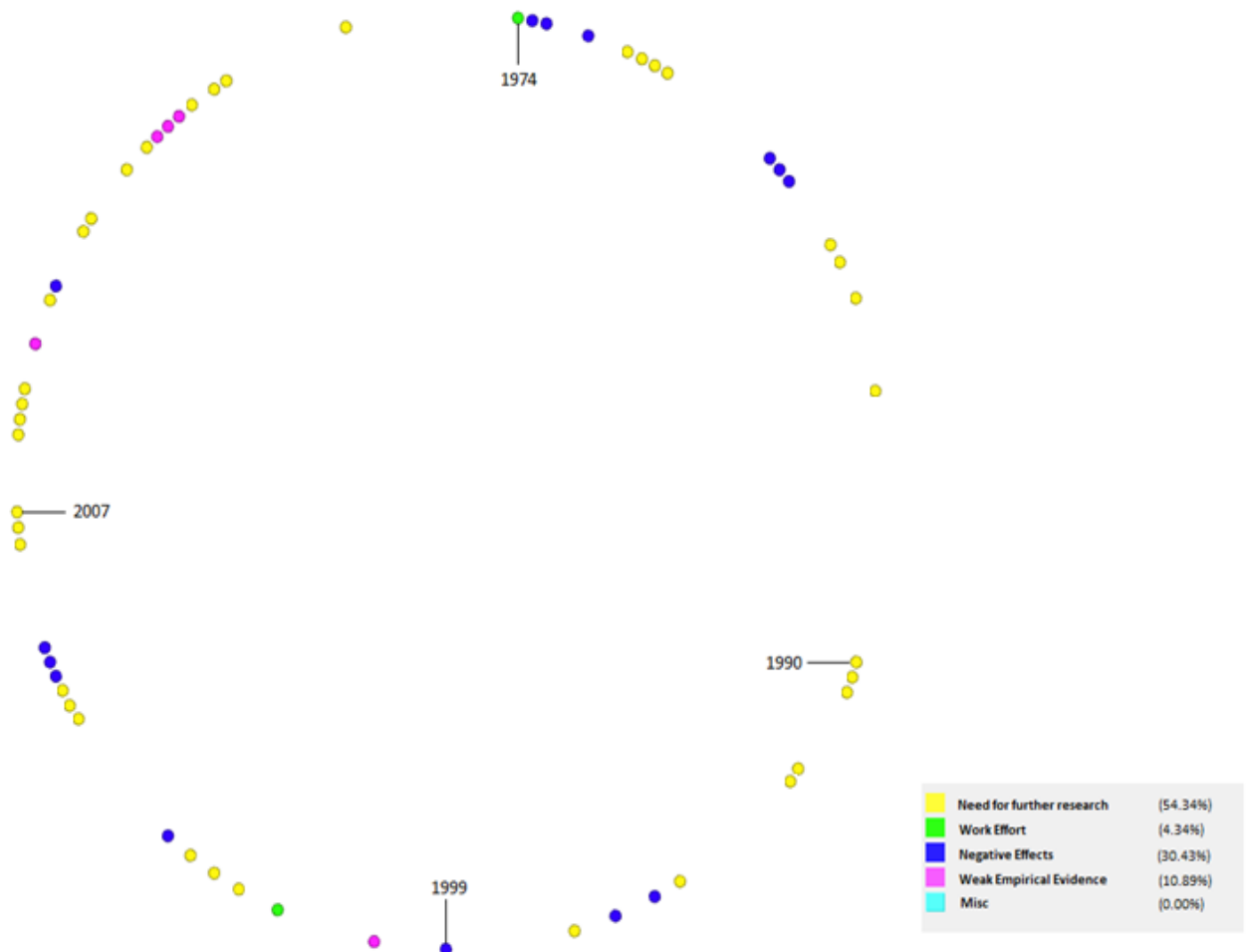
Figure 4.3: CPTED research network: Professions and Applied Science.

Layout Order: Date

Colour Ranking: Criticism

Type: Paper

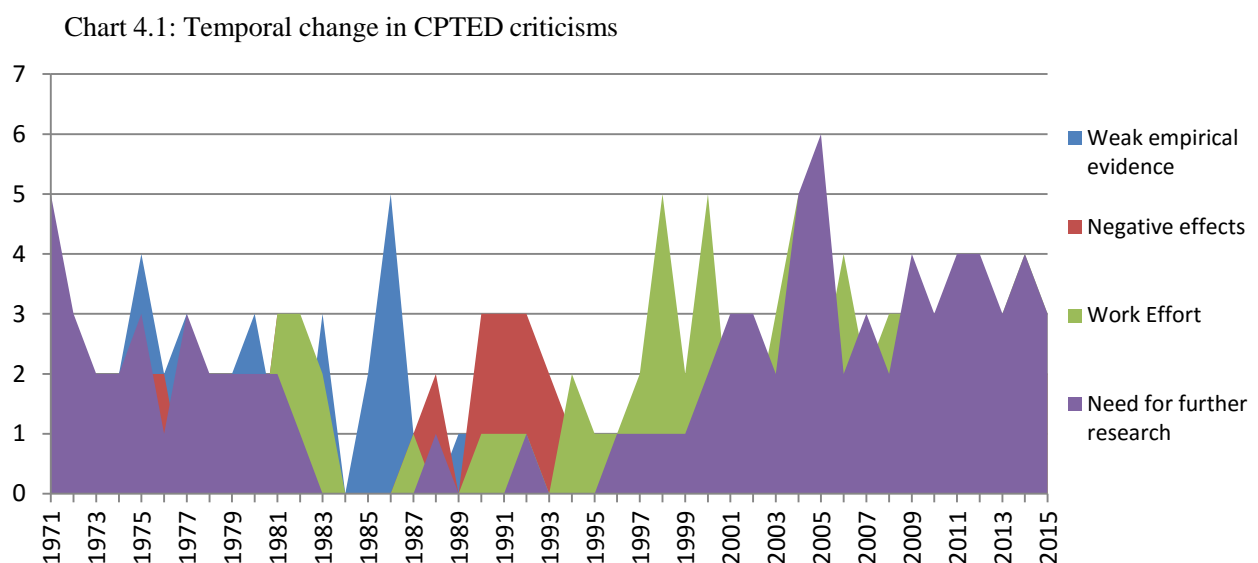
Discipline: Professions and Applied Science



This graph demonstrates the temporal shift in perception within the professions and applied science discipline and a distinct difference from social science disciplines. Between 1974-2007 criticisms emerged which suggest a need for further research and the occurrence of negative effects of CPTED which is dominant across the decades. Of note here is the lack of consideration for the work effort provided within industry, which of course seems logical given the disciplinary background of the

authors who argue the need for further research from social science academics. We therefore see a two-way flow of conflicting attitudes towards CPTED, social science researchers suggest issues with the work effort of practitioners whilst professionals suggest a need for further research from academics.

The temporal shift and fluctuations of criticisms is also evidenced in Chart 4.1 which demonstrates peaks and troughs in critical research activity across the whole CPTED community.



When looking at temporal changes of the CPTED criticisms it is clear that there is a shift in emphasis over time. The main focus in the first decade is that CPTED has weak empirical evidence and that there is a need for further research, which is understandable due to it being a new and emerging concept at that time. There is also a perception that CPTED principles have a negative impact on communities between 1987- 1992; probably a result of more recognition of CPTED in practice and more studies which evaluate its impact on crime and other aspects of planning and urban design. From 1993 onwards it becomes increasingly apparent that there are communication and collaboration difficulties between CPTED stakeholders and a general concern over the work effort of professionals in the field. The lack of social context in the consideration of crime risk is also of equal importance. These two criticisms are the focus of most studies in the last decade and a prominent topic for debate

(see Davey 2005; Wilson and Wileman 2005; Zahm 2005; Smith 2007; Kruger and Landman 2008; McKay 2009; Book and Schneider 2010; Grohe 2011; Reynald 2011).

In order to minimise bias in the methodologies behind the CPTED criticisms, geographic scale (i.e. the scale of which data for the analysis was collected) was also considered an important factor for analysis since criticisms which emerge at micro scale may not be applicable at meso scale etc.

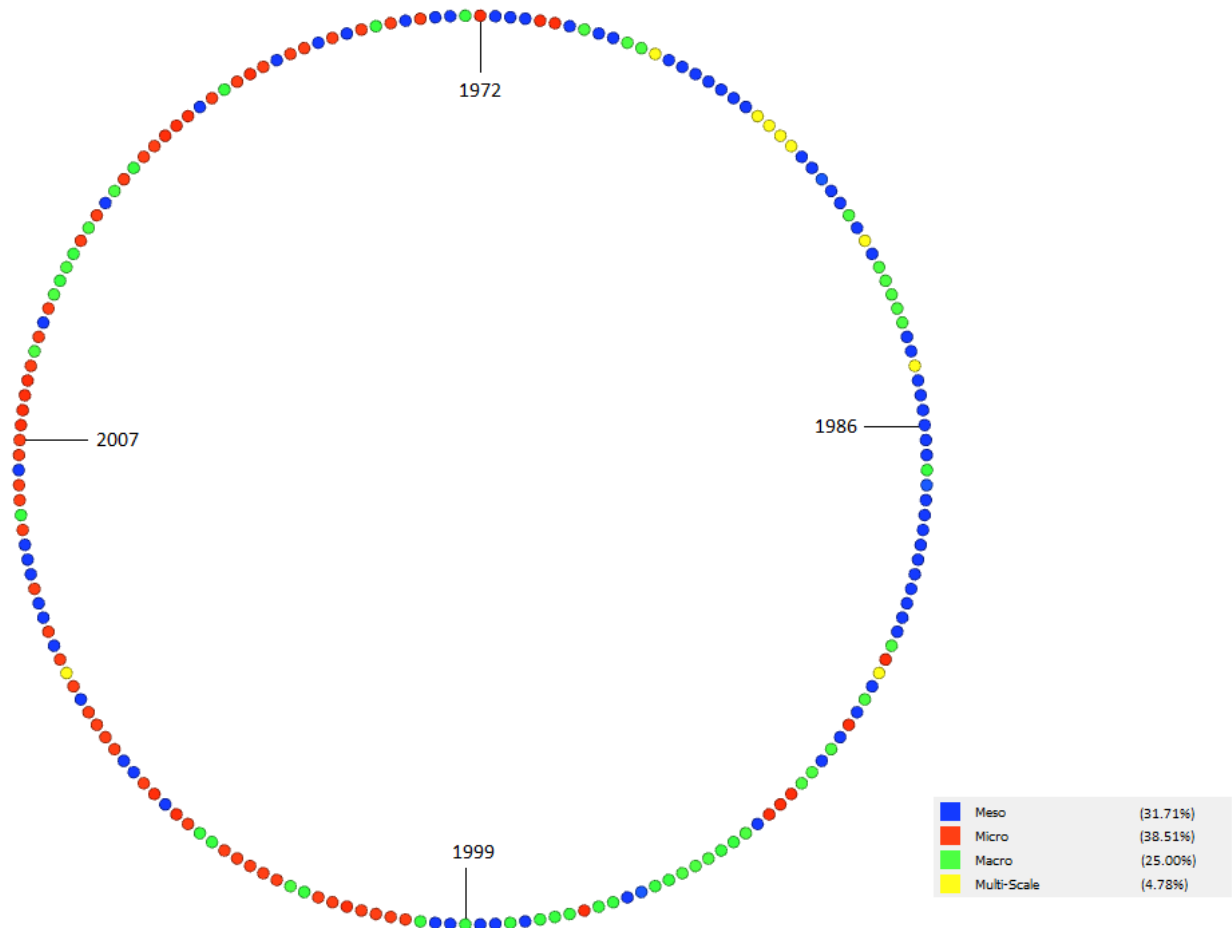
Ratcliffe (2003) highlighted issues with scale in relation to the inconsistent evidence in the CPTED field suggesting that findings are yet to reveal the impact of CPTED beyond the immediate property scale. Scale was also considered important to analyse temporal changes of the consistency of research findings in order to explore potential bias in the integrity of criticisms emerging over time.

Graph 4.4 demonstrates a distinct temporal barrier between micro and meso scale projects.

Figure 4.4: CPTED research network: Scale.

Scale of CPTED studies

Colour Ranking: Scale



From 1972-2000, there is a significant concentration on Meso, and Macro scale CPTED projects, with the occasional Multi-scale occurrence. From 2001 onwards there is a sharp increase in Micro scale research around CPTED and the literature content reveals a drive towards target hardening and fortification methods at the building scale. One could presume this change is due to a post 9/11 focus on the prevention of violent extremist and terrorism related offences and a call for hard security at the building scale although further research would be required to confirm this. It must also be pointed out

that this temporal shift in scale parallels with the increased recognition the lack of social context in CPTED application (Cozens 2000; Cozens et al 2001; Desyllas et al 2003; Smith 2007). This could potentially demonstrate a causal relationship between the recognised lack of social context and an excessive focus on target hardening at the individual building/micro scale.

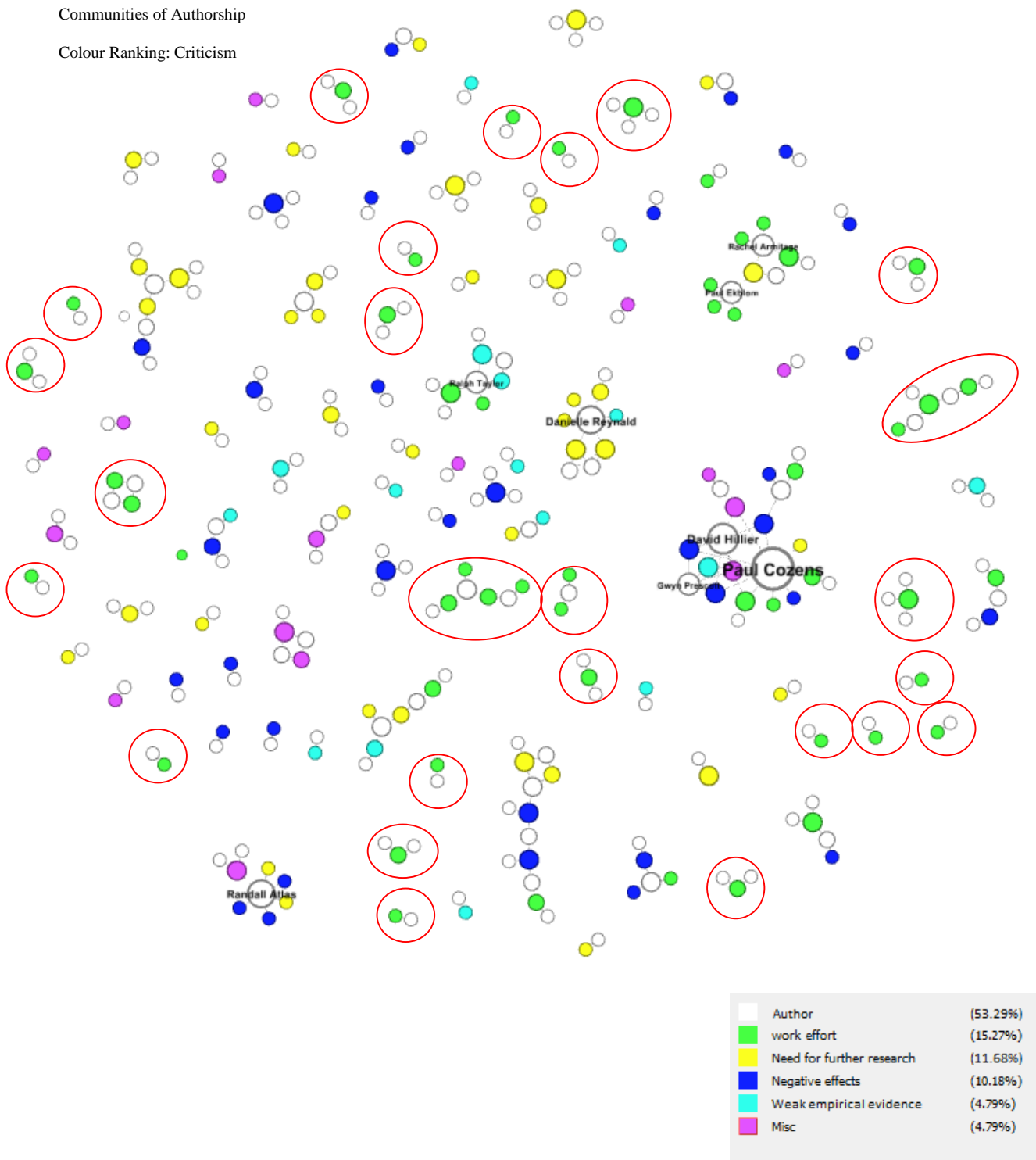
When analysing the entire network, communities of authorship were visible; based on aspects of network theorising such as the strength of ties between nodes, clusters of actors, value of information sharing, and the degree of cohesion within the research community. This indicates that some authors frequently collaborate with others which risks bias in the frequency and context of the publications. This analysis used filters and algorithms to analyse the relationships of different properties within the nodes.

Node clusters were analysed using the entire network, to establish communities of authorship. Algorithms were used to measure various statistical tests within the network which established a variety of ranking parameters to size the nodes. Figure 4.5 illustrates the entire CPTED network with nodes representing both authors and papers.

Figure 4.5: CPTED research network: Criticisms.

Communities of Authorship

Colour Ranking: Criticism



The size of nodes in this graph is based on calculations of the number of connections a node has to other nodes in the network. This is sometimes referred to as connectivity. In this case therefore, the larger nodes highlight authors with the most connections, i.e. with other authors or with published documents. This network is directed, which means the edges point in one direction from one node to another node, then nodes have two different *degrees*, the in-degree, which is the number of incoming edges, and the out degree which is the number of outgoing edges. *Degrees* play very specific and valuable roles in empirical network analysis due to their ability to express the position of nodes and so representing an important aspect of network structure. *Degrees* refer directly to individual nodes within the network as a result, giving a rather influential position to combine structural and individual relevance (Snijders 2003). It therefore follows that the larger nodes are those which evidence the highest number of connections within the network and based on network theorising, are likely to demonstrate the most valuable knowledge due to the number of influencing authors within the network.

The colour ranking was based on the criticisms extracted from the content analysis. It is visually evident from this that the most dominant criticism is work effort, and is represented in a variety of pool sizes many of which are dyads. It is also apparent that there are several pools of nodes which contain only once criticism (circled in red above), highlighting the importance of this analysis to rule out any bias amongst communities of authors. The red circles represent ‘small world networks’ which contain only one criticism category of ‘work effort’ in the CPTED arena.

Based on the Strength of Weak Ties Theory (Granovetter 1973) and Structural Holes of Social Capital Theories (Burt 1992) mentioned above, it was important to analyse these small pools of authors in more detail. When breaking these pools of nodes down individually we can begin to analyse the influence certain authors hold within a network. ‘Work Effort’ was most frequent in the DCA, and is often alone in small scale networks which indicates that many authors which support the criticism either work alone, or are in research networks which only support and research this viewpoint. These networks were analysed in more depth to explore other variables which could influence bias. Figure 4.6 below illustrates the ‘Work Effort’ networks with more detailed break downs of the author’s

As a snapshot example of some of the ‘work effort’ networks, that is networks containing only ‘work effort’ as the criticism(s); we can see a mixture of diverse and identical networks in terms of author disciplinary position. It is suggested by the researcher that networks showing diversity in author discipline would have a stronger knowledgebase due to the multi disciplinary nature of CPTED and contributing knowledge from different fields.

Using the same key as above, a snapshot example the ‘need for further research’ networks are shown below in figure 4.7 which again evidence a small mixture of diverse and identical networks.

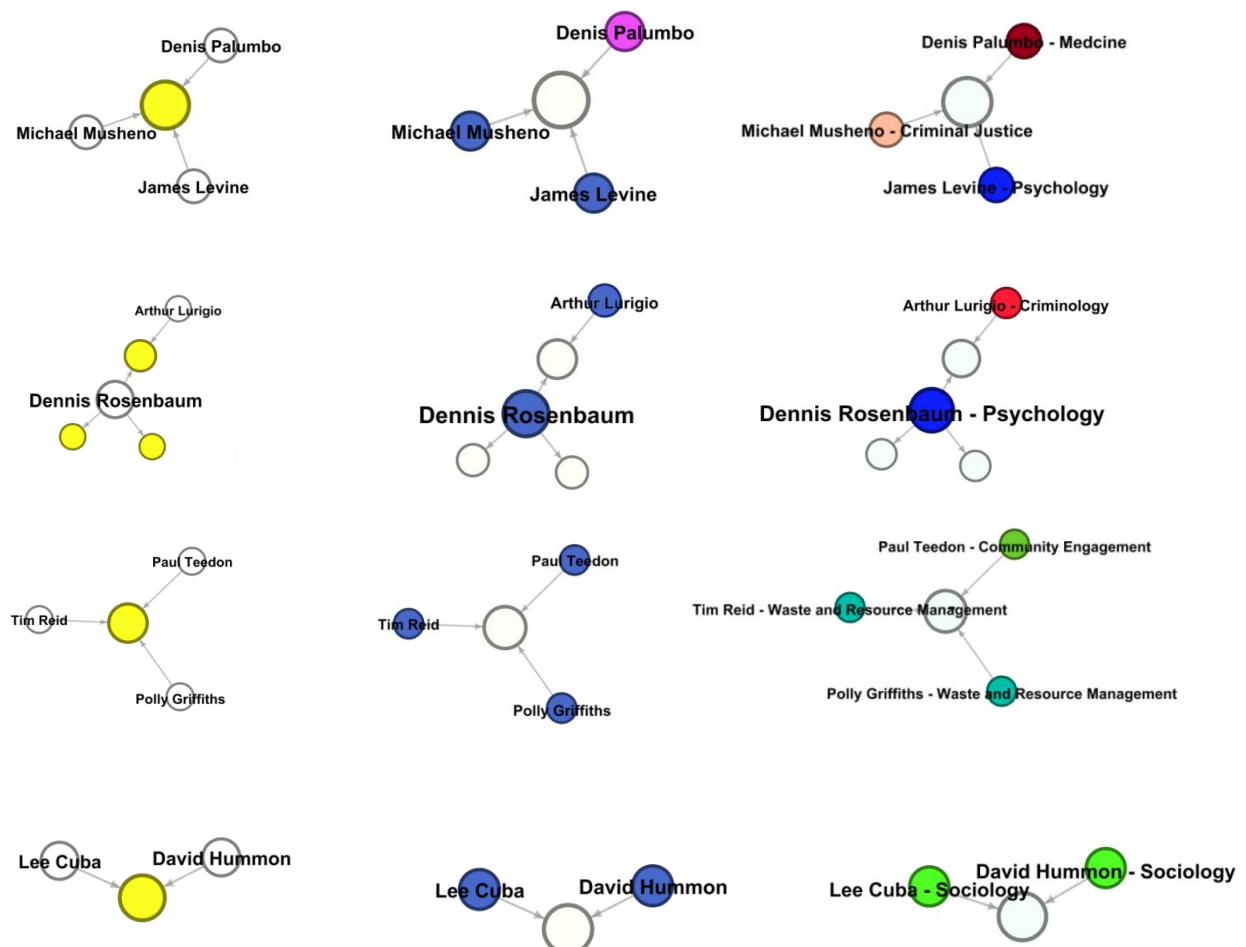
Figure 4.7: CPTED research networks: Comparison of Criticism Networks 2.

Comparison of Criticism networks with Author Discipline and Discipline Sub Category

Colour Ranking: Criticism

Author Discipline

Author Discipline Sub Category



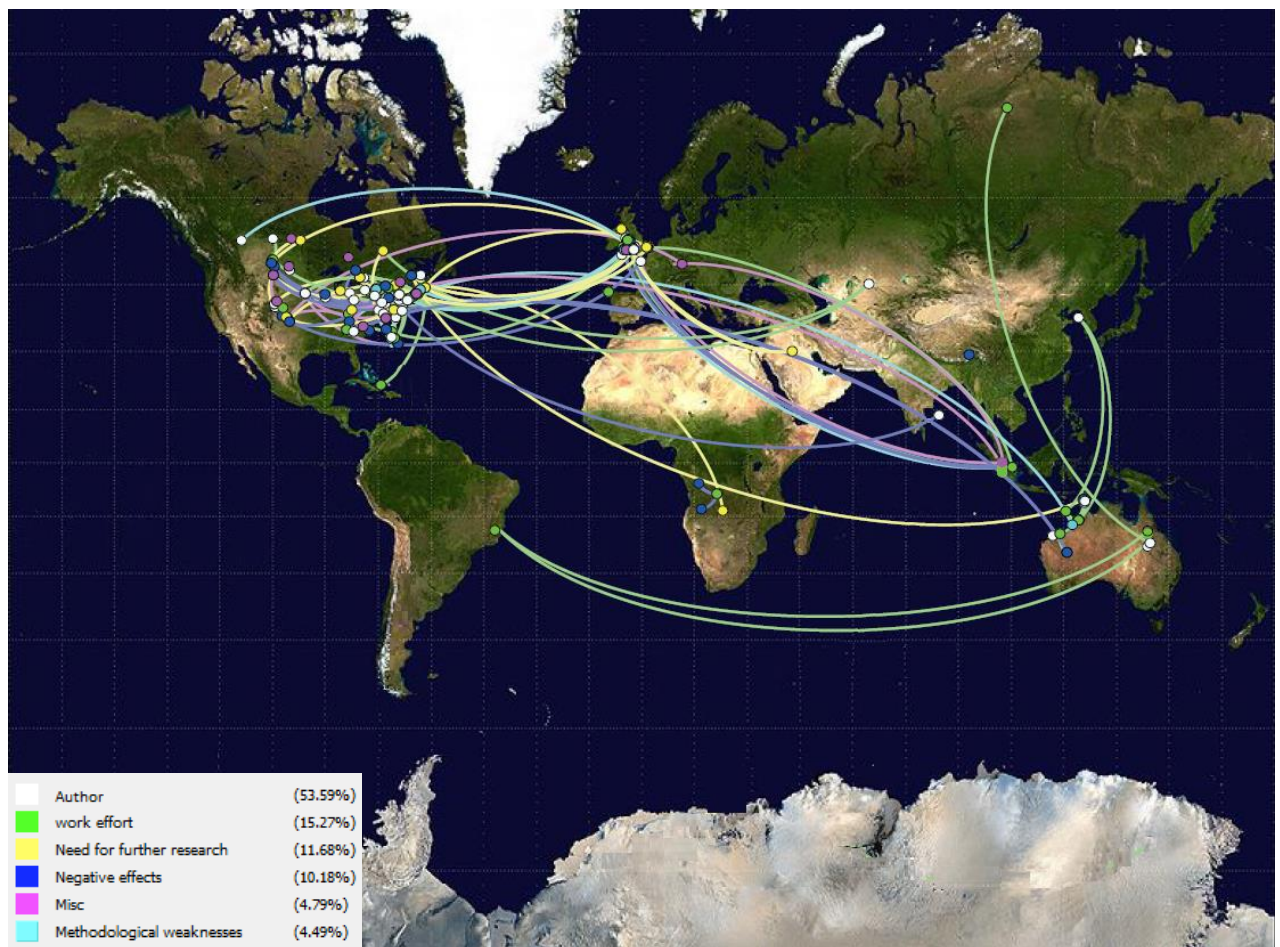


It is clear that the networks in both criticism categories contain a mixture of diverse and identical disciplinary positions. This analysis was carried out for the remaining criticism categories and results revealed in a group of all author networks containing only one criticism category and a diversity of author disciplines, 27% were ‘need for further research’, 23% were ‘work effort’ and 13% were ‘negative effects’. This suggests that the knowledge base of ‘work effort’ and ‘need for further research’ networks were highest due to the varied disciplinary backgrounds bringing a diversity of knowledge forward and arriving at a shared conclusion.

Further analysis examined the two highest ranking criticisms (‘work effort’ and ‘need for further research’) by analysing their position in larger networks of mixed criticisms. This indicated the knowledgebase of CPTED and the avenues which have been explored will be more comprehensive in networks of mixed opinions since authors may have a broader appreciation of CPTED’s limitations and will have considered other problems in the field. Results showed ‘work effort’ to feature in 43% of the mixed networks, and ‘need for further research’ in 39% of the mixed networks.

When looking at the geographical layout and connections between authors and published literature, it is possible to analyse the distribution of perceptions across different countries. Plate 4.1 shows the criticism categories across the globe and the connections between them.

Plate 4.1: CPTED research network: Geographical layout of Authors and Study Locations (Criticism Categories)



Colour Ranking: Criticism

Whilst this result may be biased due to the lack of non-English speaking publications, results still indicate that international relationships are present between most authors and study locations. Studies which conclude that ‘Work effort’ is an issue within CPTED are dispersed in terms of the author location and case study location between main continents. ‘Need for further research’ is also internationally dispersed, perhaps with a stronger European focus. For slightly more context, sub categories within each criticism were explored.

Plate 4.2 shows the geographical layout of sub categories within each criticism category and the international relationships between authors and study locations.

Plate 4.2: CPTED research network: Geographical layout of Authors and Study Locations (Sub Categories)

Colour Ranking: Criticism sub category

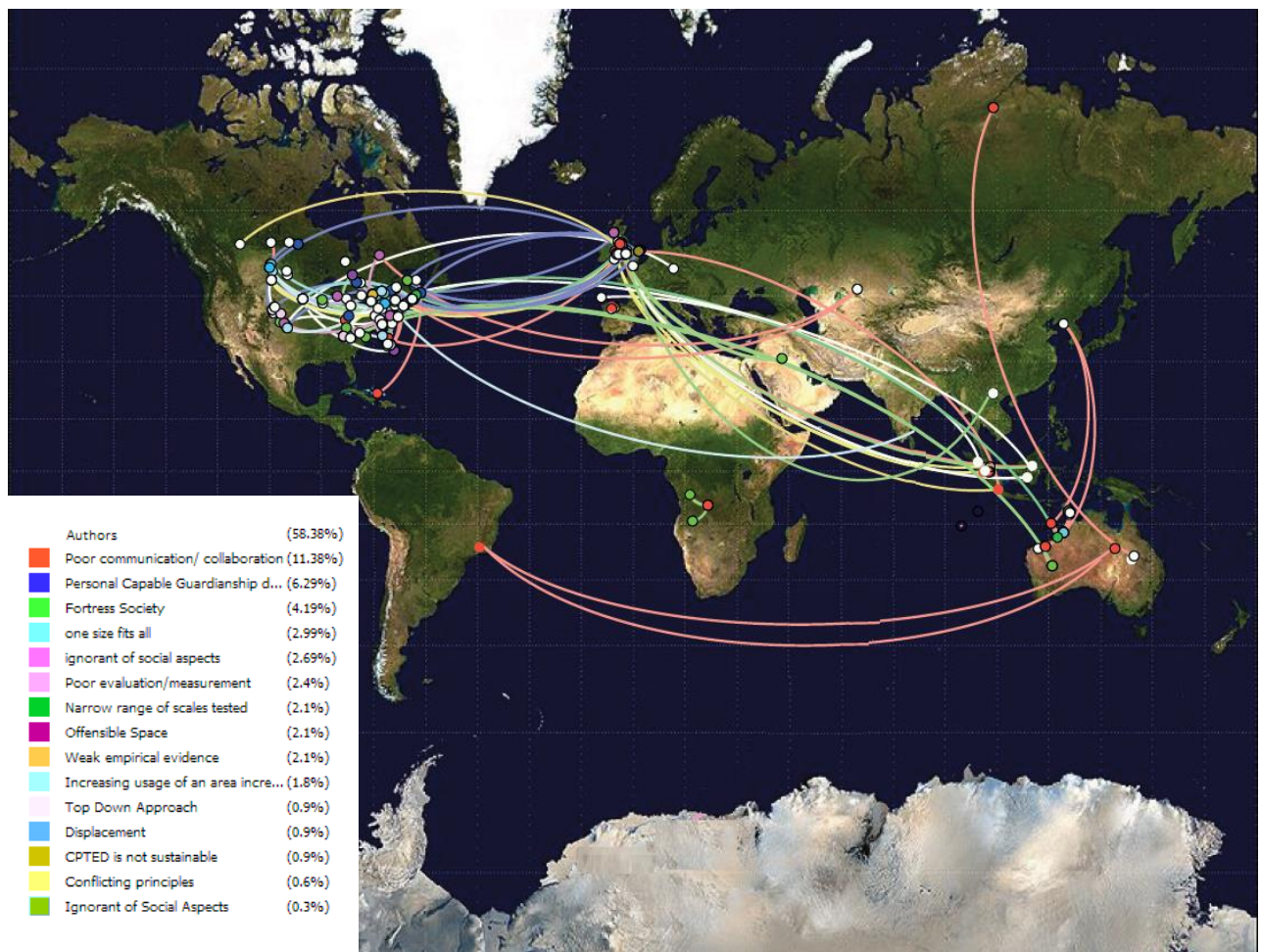


Plate 4.2 indicates that Poor Communication/ Collaboration as a criticism is the most dominant international criticism in terms of author and study location; it is most justified in terms of multi-disciplinary contribution and most distributed across the world in terms of international collaboration and study locations. ‘Lack of social aspects’ in CPTED planning is also distributed internationally in terms of author and study location, and the findings indicate that the research networks of authors do not cause significant bias in the literature. It is therefore decided based on the results of this analysis that Work Effort: Poor Communication/ Collaboration is the most justified and evidenced criticism of CPTED in terms of the potential for bias through intricate relationships and drivers behind the research network. Following that, ‘Lack of social aspects’ has become a dominant focus across many

parts of the world and is supported and evidenced by researchers from various different networks and disciplines.

4.4: Conclusion

This DCA claims a substantial step forward in CPTED development, a significant contribution to new knowledge and a vital component to the development of this thesis. As mentioned earlier, very few studies have attempted to systematically analyse CPTED literature, and of those that have, none have explored in analytical detail the criticisms put forward by academics in the field or the intricate research networks behind the publications. This analysis has developed new knowledge in the field by providing a robust evidence base of CPTED criticisms which are unbiased and vital for further exploration for CPTED development.

Through the systematic analysis of an exhaustive and representative sample of critical literature in the CPTED arena, results have confirmed that the most justified issues in terms of potential bias within the research network relate to the collaborative relationships between CPTED stakeholders and the lack of knowledge surrounding the social context of crime risk and its relationship to CPTED. Of course there are inherent links between the criticisms and some will be consequential to others however these two issues are considered to have serious and negative impacts on the effectiveness of CPTED as a crime prevention strategy.

With reference to the literature review earlier in this thesis, the context of the ‘communication and collaboration’ criticism is particularly concerned with

- engagement between built environment professionals with crime prevention experts
- conflicting priorities between CPTED stakeholders
- poor dissemination of research into practice
- conflicting and contradictory guidance
- lack of regulation and enforcement of crime prevention consideration

With regards to the issue of ‘ignoring social context’, this criticism is particularly concerned with:

- consideration of how the social conditions of community's impact upon crime and subsequent CPTED measures
- how crime and crime prevention impacts on sustainable communities and vice versa
- how crime prevention and more specifically CPTED is incorporated into sustainable development practice
- how the fear and perception of crime can impact upon crime prevention measures and the ability of communities to function sustainably

This DCA has revealed the extent of problems currently faced in this field and in doing so, it has recognised that an academic analysis of only a small proportion of the issues would be realistically feasible in the time frame for the PhD. Until now, a systematic, scientifically oriented approach to analysing the reliability of CPTED criticisms has never been achieved, therefore the research reported in this thesis fills a substantial research gap in the CPTED arena and opens many doors for further research by providing an evidence base of existing knowledge gaps in the field.

This chapter confirms that the two criticisms of focus for this PhD research will be identifying the foundations of communication and collaboration difficulties between built environment professionals and exploring the integration of social context analysis in CPTED planning. It is upon this basis that the remaining research objectives and questions have emerged:

- **Objective 3:** Update the CPTED concept to reduce the identified problems through developing an improved framework and a sustainable social component.

Research Question 3: Does the proposed updated framework and the established link between CPTED and social sustainability provide foundations for an improved and updated CPTED concept?

- **Objective 4:** Explore the impact of the proposed changes on the initial identified problems and confirm their importance for a sustainable CPTED approach

Research Question 4: Do professionals recognise that the proposed changes may positively improve the use of CPTED in professional fields?

Chapter five will explore the criticism of ‘poor communication and collaboration’ further by analysing the source of knowledge dissemination and potential factors influencing communicating and collaboration barriers.

Part B: Section 1

CHAPTER 5: *Exploring the Source of Conflict*

Part A of this thesis carried out a systematic review of CPTED literature to explore the research networks that have identified key problems in the CPTED field. The analysis confirmed that the criticisms which contained the most robust criticisms were that the CPTED field had inherent communication issues which impacted upon the work effort of professionals across disciplines. This was predominantly to do with the translation of CPTED principles into practice and the language and terminology used within the field which was considered to be inconsistent and contradictory. A second criticism with high integrity was that within the CPTED field, the social context of crime is rarely considered. This is considered not only to impact upon the sustainability of crime prevention efforts, but to reduce the ability of planners to make informed decision for crime prevention and restrict the integration of CPTED principles within sustainable development practice and policy.

Part B of this thesis aims to identify the source of communication barriers in the CPTED field. The focus of this section is therefore the lack of framework and definition consistency. Definitions serve multiple purposes, for thinking, communicating, planning, and coordination between research and practice, for gathering practice knowledge, theory and evidence. The multidisciplinary nature of CPTED makes their importance vital for ensuring that effective international research and practice outcomes are delivered. Overlooking the importance of definitions can cause impediments in terms of time, effort and opportunity, resulting in implementation failure at the cost of community safety and fear of crime (Ekblom 2011b).

Clear unambiguous definitions and transferable terminology create improved foundations for the development of a unified body of knowledge (Love 2003). Much of the literature examined in this study however, demonstrates that the key terms, concepts and definitions within the CPTED field are too broad, inconsistent and varied in different areas of study or practice. Science based research and practice such as in medicine has a controlled vocabulary, but it is uncommon to find such structure in

practice oriented social research, especially so in the practice of crime prevention. In such a multi-disciplinary field such as CPTED however, this structure is essential for common understanding between agencies. Practitioners can often assume they know what terms mean based on vernacular understanding, however problems arise when practices from diverse professional disciplines work together with different interpretation and usage of terms (Love 2003). Previous research by Gibson and Johnson (2013) demonstrated that within the CPTED field, knowledge disseminated by academics is diverse and conflicting with limited theoretical foundation. This suggests that if problems found in this research are a true reflection of the reality in practice, serious difficulties could occur.

The lack of clear terms and concepts restricts positive CPTED designs. Designers need focus and guidance for the goal of their designs, including clarification of underlying values, articulation of trade-offs and conflicts, and vigilance to creatively resolve such issues. This general laxity reflects the history and development of CPTED which has taken the form of an accumulation of ideas over time from diverse origins and different schools of thought, disciplines and practices, which are yet to be fully synthesised. Eklom describes this accumulation of concepts as a *'layered, badly-stirred mixture rather than a well- prepared construction with reliably known properties'* (2011b:13).

5.1: Data

In order to establish the source of communication barriers, a fundamental concept framework was identified as a suitable medium by which knowledge is disseminated across research and practice alike. The framework is a collective set of principles which synthesise a definition of the concept. In this case it is intended to represent the theory and evidence base behind designing out crime in a synthesised manner and is often the first illustration reached when searching for CPTED information. Such frameworks are often represented in academic publications, various guidance manuals and on consultant websites (see for example CPTED Security 2005; National Crime Prevention Council 2003; Ministry of Justice 2005). A concept framework is therefore considered to be a suitable model

for communication and one which will have significant influence on the way in which the concept in question is translated and understood.

5.2: Analysis

A systematic analysis of all published academic CPTED frameworks was carried out to analyse the knowledge base available to CPTED stakeholders. The main part of this study uses a Summative Content Analysis as discussed in chapter three. This explored the terminology and context of CPTED frameworks extracted from published documents. The purpose here was to analyse the frequency of framework terminology and compare and contrast definitions of each principle. This provides insight to the knowledgebase disseminated from academia and its inherent conflict.

5.2.1: Sampling

The study utilised the same literature sampling process as in Part A of this thesis but adopted a different inclusion and exclusion criteria which is set out below in table 5.1

Table 5.1: inclusion and exclusion criteria

<u>Parameters</u>	<u>Inclusion Criteria</u>	<u>Exclusion Criteria</u>
Location	Worldwide	
Language	Studies written in English	Studies not written in English
Time Frame	Studies published from 1970 (inclusive)-2014 (end of analysis)	Studies published before 1970
Source	Textbooks Journal Articles Peer reviewed articles	Second Generation CPTED studies
Content	Contains a CPTED framework	Papers without a CPTED framework
Type	Academic documents	Practice documents

The inclusion and exclusion criteria remained very broad but specific in its content. The most important criteria for this sample were that each document must include a CPTED framework since that would be the text extracted for analysis.

Following the inclusion and exclusion criteria, 68 documents were extracted for analysis which ranged between 1978 – 2014 when the analysis ended (See Appendix B). All documents were academic publications since it was the academic knowledgebase being analysed. The sampling frame covered a multidisciplinary array of electronic databases, relevant journal archives, broad Internet based searches, research registers and key author home pages, which were explored in their entirety. The criteria required each document to illustrate a CPTED framework version and to be a published academic document in any format. Practice documents, studies not written in English where no translation could be obtained, and studies published before 1972 were excluded. The literature therefore contained UK and international documents in an academic style only. Bibliographies were also explored to identify documents omitted from the main scoping exercise. The sample was therefore a representative subset of all CPTED literature since it was as close to exhaustive as systems would allow in terms of obtaining published frameworks. A small number of documents were unobtainable, and one had no translation available. Each document individually illustrated at least one version of a CPTED framework and its component definitions. To rule out the snowballing effect, the source of reference was obtained for each framework so that each concept heading and definition was only used once without counts being distorted by the inclusion of duplications (Table 5.3).

5.2.2: Method

Summative content analysis (Holsti 1969; Kondracki et al 2002; Hsieh & Shannon 2005) was used to extract and analyse key words from the CPTED frameworks. Within each framework, concepts were broken down for further analysis by comparing and contrasting definitions in depth. The purpose of this analysis was to identify the inconsistency and level of conflict within the CPTED knowledgebase and in doing so summative content analysis provided a systematic approach to comparing and contrasting the terms used within the framework and their definitions.

Two key terms for this thesis require definition and clarity at this stage:

Concept in this study refers to a theory driven classification of common principles with a shared desired goal/aim. *Principle* in this case will be referred to as a fundamental proposition that serves as the foundation for a system or process within the concept. It is important at this stage to clarify the

meaning of such terms to keep the framework analysis, development and discussion consistent and understood by all readers.

The summative content analysis process occurred in the following stages:

Stage one extracted all framework terms and their definitions, the author and the source of the documented framework.

Stage two analysed the frequency of framework terms and the frequency of framework sources to establish the most frequent key terms.

Stage three analysed common sources and the disparity of concept terms used.

Stage four analysed the latent content of framework definitions and their position as a source of guidance and knowledge transfer.

5.2.3: Results

5.2.3.1: Stage 1

Terminological discrepancy is evidenced in the literature studied in this research. CPTED terms and concepts vary considerably throughout the frameworks analysed. Stage one found a range from three to seven headings being used within a framework. Generally, *Access Control* (40), *Territoriality* (37), *Natural Surveillance* (34), *Surveillance* (27), *Activity Support* (21), *Target Hardening* (17), *Territorial Reinforcement* (14), *Natural Access Control* (12) are the most recognised concepts. Of note here is that more socially ascribed concepts such as activity generators, maintenance and community organisation approaches are significantly under-represented in the frameworks and are dominated by more security oriented concepts such as Surveillance, Access Control and Target Hardening.

Although in any one framework there were only ever a maximum of 7 concept headings, the content analysis extracted a total of 59 terms (See table 5.2 and figure 5.1 for illustration) to label each component part. Such a large number immediately indicates disparity and conflict of the terms used

throughout academic literature and thus a potential source for misinterpretation and barriers to the effective transfer of knowledge.

Table 5.2: Words extracted from the CPTED frameworks

Concepts	Count	Concepts	Count
Access Control	40	Awareness of the environment	1
Territoriality	37	Boundary Definition	1
Natural Surveillance	34	Broken Windows	1
Surveillance	27	Changes to the Physical Environment	1
Activity Support	21	Communitarianism	1
Target Hardening	17	Deflecting Offenders	1
Territorial Reinforcement	14	Environment	1
Natural Access Control	12	Environmental quality and sense of ownership	1
Motivation reinforcement	9	Exterior Maintenance	1
Maintenance	8	Image Management and Maintenance	1
Defensible Space	7	Image Milieu	1
Activity Programme Support	4	Information Provision	1
Formal Surveillance	4	Management and Maintenance	1
Image	4	Management and Maintenance of Surroundings	1
Community Building	3	Motivation	1
Image/Management	3	Natural Informal Surveillance	1
Informal Surveillance	3	Natural Supervision	1
Space Management	3	Place Maintenance	1
Image Maintenance	2	Quality environments	1
Image Management	2	Real Surveillance	1
Image/Maintenance	2	Reinforcing Natural Kingdom	1
Milieu	2	Removing inducements to crime	1
Movement Control	2	Repair and Preservation	1
Formal Organised Surveillance	2	Social Activity Support	1
Access Management	1	Signage and bans on use	1
Activity Generation	1	Situational Crime Prevention	1
Activity Location	1	Surveillance of employees	1
Activity Placement	1	Target Hardening through Security Measures	1
Available Control	1	Target Protection	1
		Territorial Behaviour	1

Figure 5.1: Words extracted from CPTED frameworks



5.2.3.2: Stage 2

Analysis of framework sources was important for establishing the frequency of key terms used within the frameworks (See table 5.3). If framework sources are duplicated, this could bias the frequency of key terms if the frameworks were identical. Deeper analysis of framework sources and the framework terms was therefore undertaken a) Identify if frameworks from identical sources were the same, and b) to reduce bias in the frequency of concept headings by eliminating duplications of identical framework versions from the same source.

Table 5.3 (Framework Sources)

Source	Count
Authors Own Interpretation/No Reference	30
Crowe	13
Westinghouse Corporation	6
Cozens	3
Newman	5
Moffatt	3
Ministry of Justice	1
Soomeren	1
Angel	1
Designing out Crime Association	1
Jeffery	1
New South Wales Guidelines	1
Tien et al	1
US Housing of Urban Development	1

Results revealed that 30 out of 68 papers offered a framework either of the authors own interpretation or unreferenced, followed by Crowe’s framework (Crowe 2000) in 13 out of 68 papers. Of note here is that the first CPTED framework and demonstration came from Westinghouse Corporation (see Kaplan & Bell 1977; Bickman 1978; Bell 1978; Kohn 1978), yet it is scarcely referenced in subsequent literature, suggesting it was ignored rather than debated. Also important is the high number of documents demonstrating a framework of either the authors own interpretation or without reference to another source, which is a potential cause for such diverse framework variations and some documents referenced more than one source for their framework, hence the ratio of framework sources to documents analysed.

5.2.3.3: Stage 3

Frameworks with the same sources were analysed further to establish the consistency of terminology and definitions. In total, there were 12 individual concept headings used within CPTED frameworks referenced to Timothy Crowe (2000); this immediately suggests disparity in framework versions. All frameworks ranged from 3 to 7 components within the framework and the consistency of framework terminology was demonstrated in 3 of the 12 frameworks. The three identical frameworks listed *Natural Access Control*, *Natural Surveillance* and *Territoriality* as the three concept headings, the definitions of which were dissimilar. This result indicates that frameworks are often misinterpreted or adapted which can then lead to further confusion in a field which relies on sound multi-disciplinary collaboration and communication.

Analysis of Framework versions which referenced Westinghouse Corporation as the source also showed inconsistency. There were six frameworks in total which referenced Westinghouse Corporation as the main source which generated a total of seven individual concept headings, none of which had more than four concepts within each. Within the sample of six frameworks, four showed identical terminology but had some variation in the definitions (particularly access control and surveillance concepts) which makes them vulnerable to misinterpretation (See table 5.4 for example)

Table 5.4: Example of definition variation

Term	Definition variation
Access Control	Focuses on decreasing criminal opportunities by keeping intruders out of a particular locale (Pesce et al 1979; Kaplan et al 1978; Lavrakas & Kushmuck 1986)
	Decreasing criminal opportunities (Wileman 1978)
Surveillance	To not keep intruders out but keep them under observation (Kaplan et al 1978; Wileman 1978)
	To increase the ability of non-offenders to view a suspicious person/event or the commission of a crime (Lavrakas & Kushmuck 1986)

Within the sample of three frameworks which referenced Paul Cozens (2002; 2003; 2005); as the source, there were a total of 11 concept headings with frameworks ranging from four to eight concepts. No frameworks were consistent in the terminology used and interestingly there were no definitions provided at all to explain any of the concepts listed, again making them vulnerable to misinterpretation.

This analysis confirms that there is inconsistency in the language and terminology used throughout the CPTED field and the way in which academics interpret and translate CPTED principles. This is likely to be the main source of confusion and a contributory factor to poor multi-agency working.

5.2.3.4: Stage 4

As part of the Summative Content Analysis process, the latent meaning of concept headings was explored to provide a deeper analysis into the content of communication. The majority of the analysis in this section so far has focused on the frequency and consistency of key words within the CPTED framework. What was important was to analyse the content of the definitions of each concept heading to establish their position as guidance for the reader as a source of knowledge transfer.

To begin the process, concept definitions were analysed to explore their position as guidance in the document. An initial frequency was calculated which identified that there were a total of 280 definitions to define the 59 concept headings extracted from the framework samples, this included 111 with no definition and 19 with matching definitions. This immediately showed disparity in definitions as a likely source of communication barriers.

After this disparity was confirmed, a basic interpretation of each definition was carried out. This highlighted that the way in which concept headings were 'defined' varied between the provision of a defined set of instructions or examples which help the reader consider how to prepare an environment for crime prevention. Other definitions were more of an outcome, a desired goal state or the social

processes achieved through successful application of the concept. There were also a number of definitions which, in character, were considered to be actually more akin to statements. These contained preparatory examples and a desired goal.

Using Access Control as an example, there were 19 different definitions provided out of 40 occurrences in the literature sample which also confirms a total of 21 occurrences with no definition provided. Definitions which were considered to be more preparatory in nature included “*Keeping doors and gates locked and interior common spaces fenced off from public areas*” (Feins et al 1997) for example. Definitions which were considered to be more of an outcome or a desired goal state included “*Prevents unauthorised persons entering buildings or neighbourhoods*” (Piombini 1987). The difference between these definition positions as guidance or knowledge transfer is that there is minimal reference to theory. It does not inform the reader as to why certain design aspects should be implemented and the impact that this can have on crime or criminal motivation. In some instances, there are definitions which are considered to be more of a statement and give a deeper insight as to the impact that a particular feature can have on crime and criminal motivation. For example, the concept labelled Space Management is defined as “*A poorly maintained area suggests that it is not often used and gives the impression that criminal activity undertaken there stands a good chance of going undetected*” (Klein and Walker 2005). Whilst this does not inform the reader about the theory behind this concept and *why* poorly maintained areas have this impact on perception, it does provide both a preparatory example and a desired goal to enable the reader to understand the impact that feature can have which many other definitions fail to achieve. Unfortunately, the frequency of statements containing both preparatory and operational components is minimal (8 out of 280 definitions).

Identification of both preparatory definitions and definitions which illustrate the desired outcome highlights the importance of socially ascribed and physically delineated tasks (See Ekblom 2011b). Preparatory definitions of CPTED concepts highlight physical design characteristics which are required to achieve a desired effect. Outcome definitions represent the social component of the concept which is required to operate the social environment and sustain the desired effect e.g. local

residents acting as capable guardians and defending public spaces. Ekblom defines these as preparatory and operational tasks which will be discussed in further detail in Part B Section 2 of this thesis.

Conflicting terminology and definitions are a significant problem in this field; if CPTED is to be accepted as best practice by all involved in construction and design, a universal framework must be available. Without a shared understanding and mutual priorities and goals, the opportunity for the maximum potential of CPTED may be hindered. Also without a thorough appreciation and understanding of the goals and desired outcomes of each of the CPTED concepts, there is significant risk that the social context of an environment may be ignored and therefore reduces the sustainability of the preparatory design which has debatably happened in this field (See section 2.8 of the literature review).

5.2.3.5: Territoriality

During the analysis a common pattern emerged with regards to the concept definitions. Whilst there have been both preparatory definitions and operational definitions identified, what was also recognised was that the operational definitions across many of the concepts had significant links to the concept of territoriality. Most noticeably, within the territoriality concept, definitions were linked to all other components of the CPTED framework. This indicated that each component had an overarching goal of increasing territorial behaviour; placing territoriality as a catalyst in the CPTED framework.

By analysing 'Territoriality' further it became apparent that in its absence as a core concept, the remaining six concepts equate to Territoriality as a mechanism to be reached only through the facilitation of legitimate human behaviour; confirming the need for a framework that offers guidance to achieve universal goals through effective design. For each concept to have a positive effect on crime levels, it would naturally rely on the positive functioning of human behaviour within the environment to sustain the physical designs. The desired behaviour (operation) consistently relates to

legitimate use and ownership over public space, capable guardianship, challenging offenders and signalling care and preservation over public space within the literature. These behaviours entwine with the nature of Territorial Behaviour, yet Territoriality is often referred to through various design features, such as open sightlines, defining public and private space (See for example Bell & Young 1978; Casteel & Peek-Asa 2000; Van & Eaton 2003; Glasson & Cozens 2010). Territoriality is simply *'a natural behaviour by which organisms characteristically lay claim to an area and defend it against members of their own species'*, claimed by Howard (1920), an English Ornithologist who became the first to fully describe the concept.

It is therefore argued that Territoriality should not be classified as a singular concept alongside and equal to others, or labelled with prescriptive design intentions; but the top level mechanism by which the overarching goal of crime prevention is to be achieved. Therefore, by implementing the CPTED concepts, the expected outcomes are an increase in territorial attitudes of the users of the environment. The subsequent overlap is due to the need for the remaining components to sustain a suitable environment for this behaviour to occur. Each concept should collectively contribute towards the desired aim of enhancing and encouraging Territorial Behaviour, with the collective overarching goal of crime prevention.

The definition of Territoriality within the CPTED framework exemplifies many problems we currently face. Territoriality is central to CPTED, but unfortunately is frequently defined in a very limited fashion (Ekblom, 2011b). Cozens et al (2005, p. 331) in their very thorough review of CPTED, noted that it is 'fraught with difficulties associated with definition, interpretation and measurement'. Ekblom (2011b), however, stresses Cozens' failure to tackle it head-on. Research in this thesis recognised a deeper issue of Territoriality which was touched upon by Crowe (2000) concerning its position within the CPTED framework and therefore proposes that it be repositioned.

Frameworks are essential for CPTED if multi-disciplinary organisations are to plan effectively and deliver sensible allocation of resources. This analysis highlighted the need for an updated CPTED framework and provided foundations for its development through a comprehensive and thorough

analysis of its component parts. It has revealed that a deeper illustration of CPTED is needed to uncover the practical necessities required to ensure a sustainable crime-free environment. The identification of Preparation and Outcome components for each principle in the CPTED framework evidences the need to consider the social domain and to work in concert with planning of environmental design rather than as a bolt on accessory. Saville and Cleveland (1997) offered a 'Second Generation CPTED' to consider similar social aspects, but this is limited by its detachment from the planning process of First Generation CPTED as discussed in the literature review. These issues should be built in to planning for design as part of a compulsory evaluation rather than an afterthought.

5.3: Conclusion

This section of the thesis set out to evaluate the current terminology and framework usage throughout academic literature on CPTED. Significant limitations have been identified, such as confusion over original contributions, lost meaning, disparities in definitions and terms and framework inconsistency. So far in this thesis there have been many inconsistencies identified in the development of contemporary CPTED, most of which are far removed from its original intentions (See Jeffery 1971). This research has confirmed that theoretical and structural development of CPTED is, and to some extent remains confused. Throughout academia, there are many different interpretations of terms based on a discipline's vernacular understanding; important values and intentions have therefore been lost or diminished through poor lines of communication. There is also a lack of formal integration of socially ascribed variables which significantly reduces the likelihoods of considering social context during CPTED planning. Acknowledging the history and development of CPTED allows the difficulties that have developed alongside it to be fully understood.

Gibson and Johnson (2013) suggested that CPTED required updating in terms of its language and terminology and framework structure. Their research supported this analysis by concluding serious inconsistencies in the knowledgebase disseminated from academia, highlighting serious practical

implications in a multi-disciplinary field. This PhD analysis has confirmed that an effective and integrated practice framework is still needed for CPTED and that the current knowledgebase delivered through the CPTED framework is diverse and conflicting.

The following chapter will explore the professional knowledgebase for CPTED and its similarity to academia.

Part B: Section 2

CHAPTER 6: Framework Development

Part B Section 1 of this thesis conducted a thorough and systematic analysis of CPTED framework terminology using a summative content analysis approach. This utilised an exhaustive sample of CPTED frameworks and explored concept headings and definitions in depth to establish the consistency of interpretations across the academic field. The results confirmed the substantial conflict in the CPTED knowledgebase disseminated from academia; inconsistency in definitions which vary between preparatory guidance and desired outcomes; confusion over the position of territoriality within the CPTED framework; and the absence of a formally integrated social component within each of the CPTED concepts. These issues are likely to provide significant opportunities for miscommunication; which not only has an impact upon the ability to interpret CPTED but it restricts its transferability and integration into planning practice.

Research by Gibson and Johnson (2013) and results obtained from chapter five confirmed that an updated CPTED framework which was theoretically grounded and structured to facilitate deeper understanding of its component parts and their impact on crime and criminal motivation was needed. In order to do this, a conceptual mapping process was conducted which explored the theoretical position of the concept headings and definitions analysed in chapter five and their inherent physical and social properties.

The aim of part B Section 2 is therefore to synthesise concept definition from CPTED frameworks with theories of crime and criminal motivation in order to develop a restructured CPTED framework with high theoretical integrity.

6.1: Analysis

CPTED's historical baggage merges theories and concepts in an illogical format, rather than an integrated model (Eckblom 2009), and subsequently there is no clear theoretical distinction or structure within many available CPTED frameworks as evidenced in chapter five.

This analysis used a conceptual mapping process to explore the theoretical position of each concept heading and classified them into conceptual themes. The classification of concept headings into themes was based on the researcher's interpretation of the definition and the theoretical foundation from which it derives.

To begin the conceptual mapping process, theories of crime and criminal motivation became the foundation of the concept map and all concept headings extracted from the CPTED knowledgebase could be conceptually linked based on their definitions. Conceptually mapping framework headings in this way also established a collective argument amongst the themes which were confirmed by their theoretical affiliation.

The most frequently occurring concept headings were analysed first to establish which theories are represented most in academic literature, and therefore could generally be argued to be the most recognised/understood concepts in the academic field. As mentioned in chapter five, the most frequent concepts include Access Control, Territoriality, Natural Surveillance, Activity Support, Target Hardening, Territorial Reinforcement and Natural Access Control.

6.1.1: Access Control

Access Control as a concept heading had 18 definitions in total, five of which were identical. Of the remaining six concept definitions, three aligned with the theory of Broken Windows and 15 aligned with Rational Choice (See table 6.1). Those that aligned with Broken Windows could be debated, however the researcher referred back to the theory which specifies that signs of incivility and areas which are not maintained or designed in a way which facilitated legitimate behaviour are more likely to encourage crime to escalate due to a perceived lack of social control (See Wilson and Kelling 1982). It can therefore be assumed that concepts which align with this theory would aim to encourage behaviour which is appropriate to the environment by the way in which it is designed, used and perceived. It is therefore argued that the definition illustrated in table 6.1 should be aligned with Broken Windows theory since it aims to encourage legitimate use of the environment through design and aesthetics. Whilst there is evidence of Broken Windows theory in this definition, a more detailed

definition in terms of preparation and outcome would have benefited in order to demonstrate a stronger theoretical alignment.

The remaining concept definitions align with Rational Choice Theory (RTC) which suitably laid the foundations for Access Control being theoretically grounded. The main aim here is to restrict access to crime targets through increased security and discourage unwarranted intrusion through defined boundaries.

Table 6.1: Access Control Theory

Theory	Concept Definition
Broken Windows	Encouraging legitimate users, discouraging illegitimate users and thoughtfully locating entrances/exits, fencing and lighting (x3)
Rational Choice	Used to control times of public space and use, such as the case of a walled in park, closed to visitors during late evening hours
	Reduce the opportunity for crime and keep potential offenders out of areas where they may commit crimes.
	Focus on decreasing criminal opportunity by keeping unauthorised persons out of a particular locale
	Focus on decreasing crime opportunity and operating to keep unauthorised persons out of a particular locale
	Attempts to prevent unauthorised persons from entering businesses, residences or other areas for criminal purposes
	The object is to limit and define access by using symbolic or physical barriers to discourage unwarranted intrusion
	Focuses on decreasing opportunity for crime by keeping potential offenders out of particular areas
	Preventing unauthorised persons entering buildings or neighbourhoods
	Real or Psychological Barriers
	Keeping doors and gates locked and interior common spaces fenced off from public areas
	Access is limited to official users of the activity by making non user presence exceptional or out of the ordinary
	The number of entrances, door type and placement, and design of the internal environment to control user movement
	Decreasing crime opportunities by denying access to crime targets and creating a perception of risk to the offender
	The level of control that people access over space. Achieved by limiting the points at which the public can enter private or semi-private spaces
	Denying access to targets through spatial definition, security guards, limited entrance and exits and fewer through streets

Whilst these definitions do vary, the general consensus aligns with rational choice theory through controlling access to semi public and private spaces, defining boundaries to prevent trespassing and

improving and strengthening boundaries to restrict access; thereby increasing the effort required to proceed with the criminal act, increasing the risk of being caught and consequently making the target seem less attractive.

Although this concept heading has been aligned with rational choice theory, there is more than one CPTED component recognised within this concept heading. The notion of defining boundaries as well as restricting access to targets are both present which indicates there may be a need for sub concepts/principles of access control to achieve the overall goal of the concept. This will be discussed in more detail later in the section.

6.1.2: Territoriality

Whilst Territoriality is the second most frequent concept heading to emerge from the CPTED knowledgebase, it was decided that due to its proposed repositioning within the CPTED framework, this would be analysed separately after the other concept headings had been explored. It was however important to highlight the position of territoriality as the second most frequent concept within the structure of this chapter.

6.1.3: Natural Surveillance

Natural Surveillance was the third most frequent concept heading within the literature sample with 20 definitions in total, two of which were identical. Of the remaining concept definitions, 18 aligned with RAT, one with Rational Choice Theory (RCT) and one with Territoriality (See table 6.2).

Table 6.2: Natural Surveillance Theory

Theory	Concept Definition
Routine Activity	Directed at keeping intruders under observation
	Natural by-product of residents' routine activities e.g. clear sightlines etc.
	CPTED emphasises the use of natural surveillance by strategically placing windows, building orientation and landscaping that provides border definition without obscuring the line of site

	Achieved by placing windows in locations that allow intended users to see or be seen while ensuring that intruders will be observed as well.
	Directed primarily at keeping intruders under observation
	Increased street lighting and removal of non-see through fences and barriers
	The use of sidewalks and parks in public spaces must be such that they enhance visibility and surveillance
	Internal and external lighting, visibility to the place and placement of vulnerable targets
	You want to keep any potential intruders under observation and create a perception of a witness
	The placement of physical features, activities and people in such a way to maximise visibility
	The combination of open design, good lighting and increased street use, facilitated by mixed use zoning all lead to eyes on the street which tends to deter criminals
	Residents observing areas
	Opportunities for resident's self-surveillance as facilitated by windows and design and surveillance as part of capable guardianship
	Natural Surveillance and Sightlines, land use mix and activity generators
	Promotes design features that maximise visibility of people, parking areas, building entrances and vulnerable exterior spaces
	Opportunities for residents to observe the street facilitated by the design of the street, the location of entrances and the placement of windows
	Traditional factors like good lighting are important, but don't overlook a natural factor such as a strategically placed window or the placement of an employee work station
	The link between an areas physical characteristics and resident's ability to see what is happening
Rational Choice	Decreasing crime opportunities by denying access to crime targets and creating a perception of risk to the offender
Territoriality	As a by-product of normal routine activities, residents may be able to control the use of space

When interpreting the definition which aligned with RCT, it did not contain the same focus as the other definitions in the RAT category. The focus of this definition was upon denying access to the offender which was the goal of the previous concept of access control and subsequently RCT. This type of conflict in CPTED frameworks is a primary source of misinterpretation.

The concept heading which aligned with territoriality was due to its focus on the control exerted by residents. Whilst the other definitions which align with RAT also discuss residents carrying out self-surveillance etc.; there is no mention of the *way* in which residents exert control in this definition and it can therefore only relate to the definition of territoriality.

The remaining definitions which align with routine activity theory predominantly focus on aspects of capable guardianship and ensuring that places are always overlooked and potential offenders are

under observation. These aspects are fundamental to RAT which assumes that in order for a crime to occur, there must be a suitable target a motivated offender and the absence of a capable guardian (Cohen & Felson 1979). If guardianship is increased through this concept, the likelihood of a crime being committed is reduced.

6.1.4: Surveillance

The concept heading of surveillance was the 4th most frequent concept with 26 occurrences in total, 14 which had no definitions and 12 which provided definitions, all of which aligned with routine activity theory (See Table 6.3).

Table 6.3: Surveillance Theory

Theory	Concept Definition
Routine Activity	Increase offenders risk by creating an environment in which potential offender's behaviours are very likely to be observed.
	To not keep intruders out but to keep them under observation
	Aims at increasing the risk to offenders and consists basically of keeping potential offenders under observation
	Not to keep intruders out but to keep them under observation
	To put the offender under threat of being observed and therefore identified and apprehended
	Meant to increase the ability of non-offenders to view a suspicious person/event or the commission of a crime
	Putting the offender under threat of being observed, identified and apprehended
	Increase the risk of detection and apprehension through improved lighting, security guards and relocation of vulnerable areas close to high traffic areas
	The site can be naturally and easily observed; the goal of surveillance is to keep intruders under observation
	The extent to which spaces are watched by other people so that desirable activity will be observed
	Who is present, when and whether they are able to see what is happening around them
	Observation, natural and formal through windows, open spaces and lobbies and CCTV

Analysis of these definitions confirmed their theoretical position through the focus on guardianship as a component to remove opportunities for crime. What separates this concept from Natural Surveillance is that many definitions focus on more formal surveillance mechanisms such as security guards and CCTV, thereby reinforcing the propensity for Surveillance to act as a concept with two supporting principles of Formal and Informal Surveillance and reinforces the fact that the term surveillance alone does not distinguish between formal or informal mechanisms.

6.1.5: Activity Support

The concept of Activity Support was the 5th most frequent concept heading with 15 definitions in total, seven of which were identical. Of those which provided definitions, all 15 aligned with Broken Windows theory (BWT) (See table 6.4).

Table 6.4: Activity Support theory

Theory	Concept Definition
Broken Windows	It entails efforts aimed at stimulating appropriate activity by reinforcing desired uses of sites. Activity magnets can be provided to attract diverse users, these can also provide safe and enjoyable outlets for energies which might otherwise be directed to anti-social acts
	Increase the effective use of the environment
	Strategies for reinforcing existing or new activities as a means of making effective use of the built environment
	Involves methods of reinforcing existing or establishing new community activities as a means of making effective use of the environment
	Attempts to identify strategies which reinforce existing or new activities as a way of making effective use of the built environment
	Methods of reinforcing existing or new activities as a means of making effective use of the built environment
	Tactics reinforcing existing activities or introducing new activities in a setting
	These strategies aim to reinforce existing or new behaviour patterns that make effective use of the built environment
	Increasing human use of an area by making it more attractive
	Enhances the use of common areas and thereby enhances surveillance through clustering of stores, promotion of street activities and information displays
	Any activity that increases the presence of legitimate people
	The use of design and signage to encourage intended patterns of use in public space
	The use of design and signage to encourage intended patterns of use in public space
	The use of design and signage to encourage intended patterns of use in public space
	The use of design and signage to encourage intended patterns of use in public space

The definitions of this concept confirm its theoretical position with BWT through its focus on reinforcing desired uses of sites, providing attractive environments and encouraging legitimate use of space by reducing incivilities. BWT aligns with these goals since its central premise is that removing signs of incivilities may reduce criminal activity and enforce a positive social norm through legitimate use of public space (Wilson & Kelling 1982).

6.1.6: Target Hardening

Target hardening was the 6th most frequent concept heading with nine definitions in total, all of which aligned with RCT (See table 6.5)

Table 6.5: Target Hardening theory

Theory	Concept Definition
Rational Choice Theory	Putting obstacles such as locks and security screens in the way of potential offenders
	Improving building security standards
	Methods of making the target of a crime less accessible to potential offenders
	Improvements that make unauthorised access more difficult
	Denying access to possible crime targets through the use of fences, locks and alarms
	Traditional architectural approach to crime prevention, anything that makes the physical commission of crime more difficult
	Safety and Security, locks, bolts, electronic alarm systems x3

Target hardening has a very strong theoretical grounding and is not easily confused or misinterpreted due to its excessive focus on traditional crime control by keeping intruders out and restricting access to targets. RCT states that an offender weighs up the cost and benefit of committing a criminal act and therefore by restricting access to targets and increasing the effort required to proceed with a criminal act, the crime is less likely to occur (Cornish & Clarke 1985). Definitions of target hardening align with this theory through the overt focus on increasing security and restricting access to targets through locks, bolts, alarms and improved building security standards. With all concept definitions aligning with this theory, it has a strong theoretical foundation within the CPTED framework. What is recognised however is that this concept has inherent links with the concept of access control, both of which align with RCT. What varies however is that access control has a broad approach to restricting access to crime targets which adopts both security *and* natural design mechanisms. Target hardening suitably represents the security focused component through locks, alarm systems and more formalised

security mechanisms. It can therefore be argued that Target Hardening is a sub concept/principle of Access Control.

6.1.7: Territorial Reinforcement

Territorial reinforcement is the 7th most frequent concept heading but it will again be discussed at the end due to its proposed reposition within the CPTED framework. It is anticipated that following the analysis of each individual concept heading and those concepts which refer to enhancing territorial behaviour, a solid argument will be provided for its reposition within the framework.

6.1.8: Natural Access Control

Natural Access Control was the last concept heading which occurred frequently in the literature sample. It had nine definitions in total, four of which aligned with RCT, two with BWT and one with RAT. Two definitions could not be categorised due to their lack of detail which stated that Natural Access Control is ‘directed at reducing opportunities for crime’ (See table 6.6); again evidencing another cause for misinterpretation and confusion.

Table 6.6: Natural Access Control theory

Theory	Concept Definition
Routine Activity Theory	Locating access points to the property in such a way as to use natural environment to facilitate surveillance
Rational Choice Theory	Uses doors, shrubs, fences, gates and other physical design elements to discourage access to an area by all but its intended users
	Designed to limit easy access to a crime target and to create a perception of risk in offenders
	Reducing opportunities for crime using spatial definition to deny access to potential targets and creating a heightened perception of risk in offenders
	Space should give some natural indication of where people are allowed and not allowed.
	Don't depend on just locks and guards, but make security a part of the layout
Broken Windows Theory	The use of sidewalks, lighting, signage and landscaping to clearly guide the public to and from the proper entrances and exits
	Physical guidance of people coming and going from a space by the judicious placement of entrances, exits, fencing, landscaping and lighting

This concept heading is interesting since one would expect it to have a similar theoretical affiliation to the concept of Access Control. This concept heading differs however in that it aligns across all three theories and evidences inherent confusion in the definition of the concept. It is therefore suggested

that this concept heading is discarded from the framework restructure and Access Control is used as a more comprehensible alternative.

Moving on to the remaining concept headings which were less frequently represented in the literature, we can begin to explore the diversity of language and terminology used within the CPTED field and their theoretical links to other concept headings.

6.1.9: Motivation Reinforcement

Motivation reinforcement is a concept heading which again has confusion over its definitions which tend to align across two of the three main theories; the majority of which however are affiliated with RAT (See table 6.7). The central premise of the concept definitions which align with this theory relates to increasing the perceived risk to potential criminals through the design of the environment and the legitimate behaviours which occur within it.

The concept heading which aligns with BWT is particularly focused on encouraging communities to engage which corresponds with the premise of BWT. This argues that an area which has no incivilities will maintain a positive social atmosphere and perceived social control.

The final concept heading aligns with Territoriality; an overarching entity within the CPTED framework. This definition focuses specifically on attachment and encouraging residents to develop a sense of belonging. Whilst this does align with theories like Broken Windows and Rational Choice, there is no reference to the offender or the way in which this concept may impact upon crime or criminal motivation. Its sole focus is on the overarching goal of enhancing territorial behaviour.

Table 6.7: Motivation Reinforcement Theory

Theory	Concept Heading
Routine Activity Theory	Seek to affect offender motivation and behaviour relative to the designed environment by increasing the perceived risk of apprehension and by reducing the criminal payoff
	Attempts to alter offender motivation and behaviour by increasing the risk of apprehension and by reducing the potential payoff
	Seeks to affect offender behaviour and offender motivation by increasing the risk of apprehension and by reducing the payoff to the offender
	Strives to affect offender motivation and hence, behaviour relative to the designed environment by increasing the perceived risk of apprehension and by reducing criminal payoff

	To encourage residents and users of an area to have an enact positive attitudes about their living and working environment and to discourage potential offenders by increasing the risk of apprehension and reducing the payoff to crime
Broken Windows Theory	Seeks not only to affect offender behaviour but also offender motivation and at the same time to elicit positive attitudes and behaviour on the part of citizenry in general Involves activities which enhance the desire of students to engage in crime prevention activities
Territoriality	Develop a sense of belongingness in the environment and to promote and reinforce the development of a community identity

Motivation Reinforcement is interesting in that the language used does not naturally associate with any of the more frequent concept headings. The definitions and their theoretical affiliation however suggest that it is more strongly aligned with concepts of surveillance which increase the perceived risk to offenders, although there are strong associations with BWT and territoriality by influencing positive attitudes and enhancing social engagement. Due to this, the term Motivation Reinforcement is discarded as a concept heading from the reconstructed CPTED framework.

6.1.10: Maintenance

Maintenance occurs eight times in the literature sample but only two provide definitions; both of which align with BWT. This is to be expected since the theory reinforces the idea that removal of incivilities reduces the likelihood of crime escalating and a perceived lack of social control. The concept does not however discuss the impact that maintenance can have on perceived social control and the escalation of crime and is therefore not suitable as a concept heading on its own.

6.1.11: Defensible Space

Defensible Space surprisingly only had seven occurrences in the literature sample, five of which failed to provide a definition. The two definitions provided aligned with territoriality with the central premise being that in order to maintain crime, a community must appear to defend itself. Whilst this is an important aspect of the CPTED concept, this research identified it be more of an overarching goal as discussed earlier and was therefore discarded as a concept heading from the framework reconstruction.

6.1.12: Activity Programme Support

Activity programme support has four occurrences within the literature sample but only two definitions, both of which are aligned with BWT. The definitions of this concept are strongly associated with the concept heading Activity Support but are particularly focused on the functioning of specific programmes within a community and the way in which this positively reinforces social stigma and community control. It is proposed that due to the theoretical alignment and shared aim, that activity programme support is the same as activity support and stresses the importance of considering social programming within the concept.

6.1.13: Formal Surveillance

Formal surveillance is again a straight forward concept heading. It occurs four times in the literature sample with three identical definitions, all of which align with RAT. The majority of the definitions separate formal surveillance from its counterpart natural/informal surveillance through direct focus on using technology as a means of observing people. This reinforces the idea that concepts which align with RAT are ‘guardianship’ and surveillance oriented and within the concept there are two sub concepts/principles of formal and informal surveillance and also reinforces the fact that surveillance that relies upon more formal mechanisms cannot rely on the term ‘surveillance’ alone for direction.

6.1.14: Image

The concept heading of image is similar to that of maintenance which considers the way in which an area is maintained and the way in which it is perceived. Both definitions in this category are affiliated with BWT which confirms their alignment and shared argument. It was suggested that this concept heading is joined with maintenance in that a positive image must be managed through a variety of social and physical characteristics and maintenance must act as a vital driver in maintaining a positive image of the environment.

6.1.15: Community Building

Community building has three occurrences, two of which have definitions. Each definition aligns with territoriality since its focus is on strengthening ties of local communities and encouraging community

involvement. For this reason, community building is excluded as a concept heading from the framework reconstruction.

6.1.16: Image/Management

This concept heading provides three identical statements as their definitions which claim that ‘well maintained areas promote care for the environment’. This shares the same premise as both Image and Maintenance which were proposed to join as one principle due to their shared goal. It was therefore suggested that a concept heading of Image Management and Maintenance suitably represented the perception component of BWT in the sense of removing incivilities to create a positive social stigma and sense of control.

6.1.17: Informal Surveillance

Informal Surveillance has two identical concept definitions which claim that it relates to natural physical features which maximise visibility of offenders; both of which align with RAT. These concept definitions are the same as Natural Surveillance and also demonstrate their separation from the concept of surveillance and formal surveillance through focus on design to increase sightlines rather than formal mechanical surveillance. What is important however is that informal surveillance definitions are more theoretically grounded than ‘natural surveillance’ and therefore confirms their theoretical foundation and their position within the CPTED framework as previously stated.

The following concept headings are represented in a table due to their infrequency and lack of definition. The right hand column highlights their theoretical foundation and alignment with other concept headings extracted from the literature sample.

Table 6.8: Theoretical alignment of remaining concept headings

Theory	Concept Heading	Definition	Discussion
Routine Activity Theory	Available control	Help from citizens, pedestrians and residents occupying the location, controlling exits and entrances and controlling the location of lighting and natural surveillance	Generalised overview of all CPTED concepts but most strongly aligns with Routine Activity due to the focus on surveillance and resident control to increase risk to offenders.

	Formal Organised Surveillance	Space and equipment such as cameras and monitors provide for official surveillance activities	Clearly aligns with routine activity theory by increasing capable guardianship during routine activities. Formal surveillance distinctively separates itself from Surveillance and Informal Surveillance due to the focus on organised surveillance mechanisms. This confirms the concept of Surveillance needs two sub concepts/principles of formal and informal surveillances
		CCTV, Neighbourhood watch, street patrols etc.	
	Natural Supervision	Build to be supervised easily with help from citizens and police with no blind spots	This aligns with natural surveillance concepts and routine activity theory due to the focus on capable guardianship and increasing supervision through design
	Surveillance of employees	Enlisting individuals who work with the target area such a housing authority staff to help identify problem locations and individuals	This concept definition aligns with routine activity theory, and particularly formal surveillance by the organised presence of assigned specialists to carry out formal surveillance operations.
Rational Choice Theory	Movement Control	The ease with which an offender can move through a site	Strong alignment with the access control concept by controlling offender movement. More specifically aligns with concept headings such as boundary definitions through the use of real and symbolic barriers.
		Extends Newman's ideas of real and symbolic barriers to reduce the accessibility of residential areas to outsiders	
	Access Management	The design of public space to attract people to some areas and discourage them from others	Similarities to access control through controlling the places which people can and can't access. This aligns with rational choice theory and using design to define boundaries.
	Signage and bans on use	Something known as symbolic barriers which can be an effective means of controlling the environment	Aligns with boundary definition concepts through the focus on symbolic barriers to control the environment. The alignment with rational choice theory highlights the goal of controlling access as an overarching concept.
	Territorial behaviour	Defined by sidewalks, landscaping, porches and other elements that establish the boundaries between public and private spaces	The goal of this concept aligns with boundary definition and the overarching concept of access control through defining boundaries to control public and private spaces.
Broken Windows Theory	Space Management	A poorly maintained area suggests that it is not often used and gives the impression that criminal activity undertaken there stands a good chance of going undetected	Aligns with image management and maintenance due to the focus on poorly maintained areas negatively impacting the control of the environment.
	Milieu	The setting where building is located e.g. having a pub adjacent to a playground will be problematic	Aligns with Activity support principles by identifying the impact that certain activities can have on the social stigma of the environment and subsequent community control
	Activity Generation	Public attractions such as street vendors and music performers, climbing walls, recreation for children and public art	Whilst this does not obviously align with broken windows theory, the assumption is that these activities will encourage legitimate use of space and signal a sense of community control which is the premise of broken windows theory and the aligning concept of activity support.

	Activity Placement	The logical placement of user activities to encourage surveillance and territoriality	Whilst this definition does describe surveillance and territoriality components, the focus on activities as a means of encouraging control through these components suitably aligns with activity support principles and the theory of broken windows by increasing positive social stigma and the perception of social control
	Broken Windows	Recognising signs of physical disorder or of a deteriorating situation before they get out of control	Strongly aligns with broken windows theory as well as the concept of image management and maintenance by maintaining physical disorder to remove signs of social decline.
	Changes to the physical environment	Variety of methods designed to influence perceptions of an area by both people who live there and by outsiders	The goal of this concept strongly aligns with broken windows theory by controlling the perception of an environment through both image management/maintenance and activity support concepts
	Deflecting offenders	Broadcasting a message that scale or use of drugs and other illicit activities will not be tolerated	This concept strongly aligns with broken windows theory by signalling a sense of control and positively reinforcing the environment through both image management/maintenance and activity support concepts
	Image milieu	Positive image of the milieu; the need for harmony between housing and the immediate neighbourhood	The goal of this concept is to positively enhance the area by maintaining a peaceful, controlled space. This aligns with both activity support and image management/maintenance concepts through managing perceptions and increasing a positive image.
	Place maintenance	Ensuring that the built environment is kept clean, welcoming and ready for use by legitimate users	Aligns with broken windows theory and subsequently the concept of image management and maintenance by maintaining a clean environment to encourage legitimate behaviour and social control.
	Quality environments	Well maintained environments to attract people and support informal surveillance processes	Aligns with image management and maintenance and broken windows theory by using maintenance to increase the perception of social control.
	Removing inducements to crime	Keeping building apartments rented as vacant units tend to be targets for vandalism and other crimes	This aligns with broken windows theory by focusing on removing incivilities so that crime does not escalate.
Territoriality	Social Activity Support	Facilities possible to achieve social activities in the area like providing jobs etc. and improving social activities.	This concept definition aligns with activity support concepts and positively improving the social environment through the way in which it is used and perceived.
	Motivation	Designed to provide incentives to residents to engage in crime prevention	This concept definition represents an overarching goal which reflects the combined efforts of all the CPTED principles
	Reinforcing the natural kingdom	Feelings of possession by owners and the presence of strangers are a problem or threat for residents	The territorial focus of this definition reflects the overall goal of the CPTED concepts which is to increase surveillance and ownership and create an environment which has a strong social control
	Environmental quality and sense of ownership	Definition and use of ownership, sense of ownership	Focus on ownership reflects the overall goal of the CPTED concepts.

6.1.18: Territoriality Table

As discussed earlier in this section, Territoriality is a debatable component of the CPTED framework (See Crowe 2000; Izmail et al 2011) and analysis conducted in chapter five has suggested its reposition from an integrated concept to a desired goal state. Table 6.10 represents the theory in which the concept definitions for territoriality are aligned.

Table 6.9: Territoriality theory

Theory	Concept Definition
Rational Choice Theory	A clear demarcation of public and private space
	The use of physical attributes that express ownership, such as fencing, signage, landscaping and pavement treatments
	Encouraging owners to take control of their environment and guide the community as to what is public and what is private
	How the design of the built environment can affect one's sense of whether a space is private or semi-private
	Ownership through symbolic and real barriers
	Symbolic and real barriers that clearly define and delineate between private, semi-private and public areas
	Defined by sidewalks, landscaping, porches and other elements that establish the boundaries between public and private spaces
Broken Windows Theory	To design settings in such a way that they clearly appear to belong to a specific group of authorised users and discourage intrusion by others
	The location within the community, traffic flow, signs and advertisements, design issues that empower some over others
Routine Activity Theory	Clear boundaries, encouraging surveillance and community ownership of spaces
Territoriality	Redesigning outdoor spaces to foster a stronger sense of ownership
	Physical Design can create or extend the sphere of territorial influence so that users develop a sense of proprietorship.
	The use of physical design to create a sense of user ownership
	Defining and defending one's own territory
	Ownership and defending space and clearly defined ownership of property
	The idea that one's home is sacred
	Physical Design can create or extend the sphere of territorial influence so that users develop a sense of proprietorship.
	Using physical design to create or elicit territorial responses from normal users of a property or building in protecting their territory

	Creating or extending the sphere of influence by utilising physical designs that enable users of an area to develop a sense of proprietorship over it and potential trespassers receiving this control are thereby discouraged.
	Increasing preparatory concern and a sense of ownership in legitimate users of space, thereby reducing opportunities by discouraging illegitimate users
	Physical design to help create or extend a sphere of influence which can increase offenders sense of risk and legitimate users sense of control
	This is an umbrella concept embodying all natural surveillance and access control principles. It emphasises the enhancement of ownership and proprietary behaviours

As table 6.10 shows, there is a variation of theoretical alignments which emerged from the territoriality concept headings. What is most noticeable however is those that are classified in a territoriality category are more of a desired outcome rather than guidance which reinforces its position as a desired goal state; one which can only be achieved through implementation of the remaining concepts. This confirms that territoriality is not one of several individual concepts but an overarching goal state which is achieved by successful application of the remaining concepts within an environment containing social conditions which support such behaviour. It is proposed that Territoriality is the overarching component which captures the operation (human response) to CPTED design.

Territoriality is a controversial concept and one which is entirely dependent upon the context of the area. Reynald (2011) provides significant evidence around the importance of territorial behaviour for ownership over public space and community control against crime. This is a vital operational component of the CPTED framework to ensure that non offending citizens have control over their environment and reduce opportunities for crime in the built environment through various functions. Whilst this is positive if successful amongst non-offending residents, there is propensity for the same territorial behaviour to occur amongst criminal communities, particularly relating to drug crime and gang warfare. Atlas (1990) argues that “*drug dens and criminal hotspots have mastered the CPTED principles for the illicit purpose of creating a safer place of 'Offensible Space' to conduct crime*” (1990:4). This reinforces the importance that context is vital for CPTED planning and that there

should be a thorough analysis of potential barriers to CPTED being ineffective or potentially criminogenic.

6.2: Framework reconstruction

Analysis of concept headings which provided comprehensible definitions revealed some patterns. Those concept headings which were most frequent and were not duplicated by repeated framework sources could generally be classified as the most universal/understood concept headings due to their quantitative representation in the literature. The less frequent the concept headings became, it could be assumed that they are less likely to be recognised/understood and therefore less likely to be used in research publications. It therefore seemed logical to analyse the frequent concept headings first to establish their theoretical positions and establish any patterns in the definitions extracted.

Throughout the analysis three distinct crime theories were evident in the concept definitions; Routine Activity Theory, Rational Choice Theory and Broken Windows Theory. These theories were frequently aligned with the concept definitions which supported a framework restructure and necessary sub concepts to be identified. For the purpose of this research, sub concepts were labelled as 'principles'. Each principle within a concept category shared the same overarching goal. The principles represented the broader concept in question, the theory which encompassed that concept and both required implementation to successfully achieve the overarching goal of the concept.

Territoriality was excluded from the concept headings and principles incorporated into the framework reconstruction. This is because the definitions associated with this concept represented a desired goal/outcome for CPTED as a whole and was generally aligned across all three theories. This confirmed that territoriality was not an integrated CPTED concept but an overarching mechanism by which the goal of crime prevention was to be achieved. Territoriality was therefore not classified as a CPTED concept and it was proposed that by successful implementation of all of the remaining CPTED concepts, territorial behaviour would be achieved.

The selection of principles for the reconfigured framework was based on a combination of frequency, theoretical alignment and consistency in definition and interpretation. Some of the concept headings

which were most frequently cited were not consistent in their definition or theoretical alignment and therefore alternative, headings were selected based on their consistency.

The six principles identified as most suitable to facilitate easy transfer of CPTED knowledge and understanding to CPTED stakeholders included:

- Formal Surveillance
- Informal Surveillance
- Image Management/Maintenance
- Activity Support
- Target Hardening
- Boundary Definition

Following the theoretical alignment of all concept headings, the six principles most representative of CPTED theory naturally fell within the following three main concepts, with an overarching goal of territoriality:

- Surveillance
- Positive Reinforcement of Legitimate Behaviour
- Access Control

6.2.1: Theoretical Foundation for Framework structure

- As previously mentioned there were three distinct theories identified in the CPTED field. The premise of RAT aligned with **Surveillance** concepts in that by increasing Surveillance in an area, capable guardianship will be improved and crime opportunities will be reduced. Surveillance contains two principles, both **formal surveillance** (that is, CCTV, police patrol, sensor systems and so on) and **informal surveillance** (that is, natural, open sightlines, observable layouts, large windows and so on) which became two principles of the surveillance concept within the restructured framework.
- A second theory is Broken Windows developed by Wilson and Kelling (1982) which relates to norm setting and the signalling effect of urban disorder on additional crime. Maintenance

and monitoring of such environments are hypothesised to prevent further vandalism and magnification into more serious events. Managing and maintaining the environment enhances a sense of ownership and care, whereas increasing use would aid norm setting by legitimate users hand in hand discouraging illegitimate activities or at least making them more noticeable.

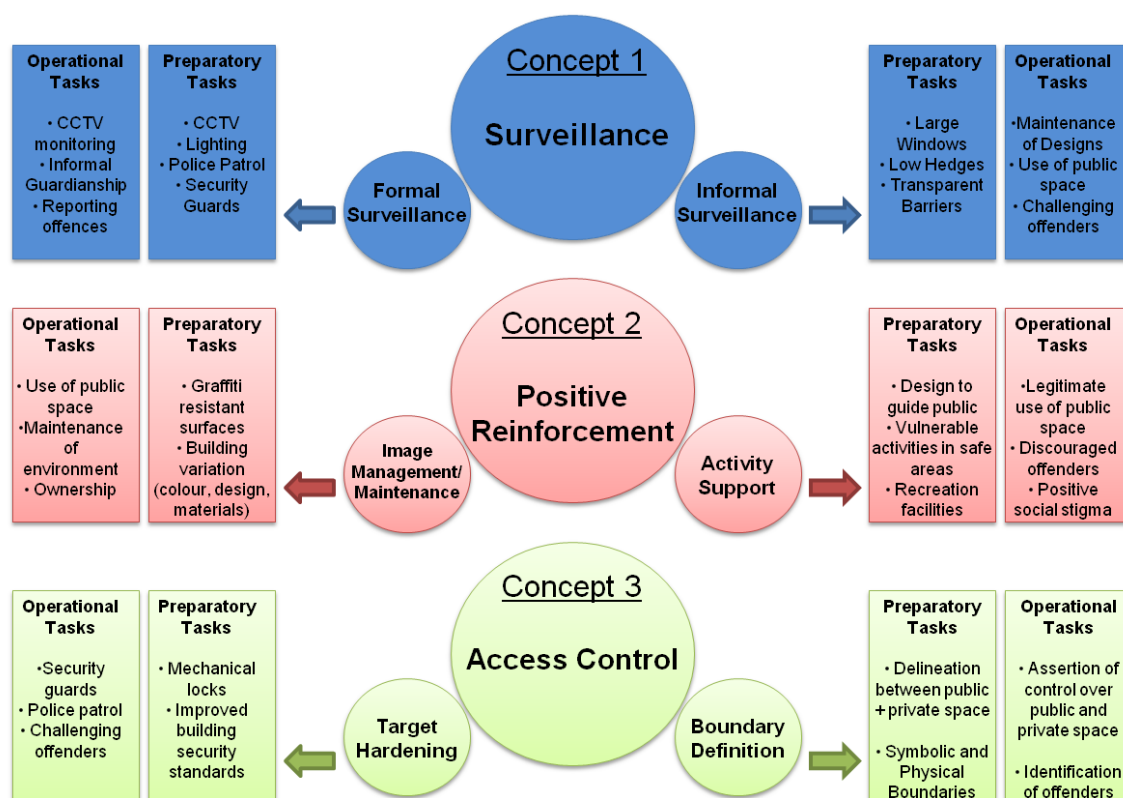
The concept of **Positive Reinforcement of Legitimate Behaviour** was built from this premise, together with the running theme of increasing use of public space and creating a sense of care and pride in the community. Two principles are therefore inherent within this concept, which together support the overall theme and hypothesis, namely, **Activity Support** and **Image Management/Maintenance**. Activity Support constitutes the notion that increasing the use of an area with legitimate users will enhance legitimate social norms. Image Management/Maintenance ensures public space is well looked after, attractive and inviting, therefore signalling a cohesive community through care and preservation.

- The third supporting theory to this framework reconstruction is Rational Choice (Cornish & Clarke 1986), which suggests that an offender seeks the most cost-effective means to achieving a goal. If so, increasing the effort needed to proceed renders a target less attractive or valuable.

Access Control has a running notion of restricting access to targets and ensuring space is not encroached utilising two principles that sustain this hypothesis, namely, **Target Hardening** and **Boundary Definition**. Target Hardening restricts access through mechanical means or human security in the form of security guards and police patrols. Boundary Definition uses real and symbolic barriers to define boundaries of private, semi-private and public space leaving an intruder more vulnerable in private space and increasing risk of capture. Real barriers would also act as restriction to access of private property. Surveillance can impose upon the individual offenders' view of capable guardianship and in turn on the measure of

‘risk’ influencing the value of the target. Image Maintenance could have similar impact through encouraging legitimate users to challenge the offender’s behaviour, so increasing risk and effort while reducing target value. These three concepts together, should facilitate the development of a physical environment that encourages Territorial Behaviour among users and an increased perception of ownership to outsiders.

Figure 6.1: Reconfigured CPTED framework



The reconfigured framework promulgates Crowe’s, 2000 version but is structured in a more operational format that can be closely aligned to CPTEDs theoretical foundations. It has condensed in format from previously cited versions and represents a clearer, theory-driven structure. Each of the three concepts and their supporting principles when working together naturally reach a collective outcome of Territorial Behaviour if the correct social conditions allow. Through the successful operation of these principles, Territoriality is achieved. They are therefore considered the ‘Preparatory

Tasks' for the operation of Territorial Behaviour, for example, the design of a suitable environment to allow such behaviour to occur.

The notion of 'Operational' and 'Preparatory' tasks derived from the work of Ekblom (2011b) who argues that it is unclear whether the concept of Territoriality is 'socially ascribed' or 'physically-delineated' in the form of 'Operational' and 'Preparatory' tasks. He concludes by suggesting that on both the theoretical and practical grounds, it would appear best to consider both of these, under an ecological framework that includes human agents in relation to their environment. Upon careful inspection of the CPTED concepts, together with the recognition of the relationship between Territoriality and the remaining CPTED framework, it was therefore identified that 'Operational' and 'Preparatory' tasks are present in all of the concepts as they require human behaviour to sustain the designs and enforce Territoriality. This conclusion was also confirmed by Gibson and Johnson (2013) in their very thorough review and reconstruction of the CPTED framework. Social aspects of each individual environment require careful analysis to ensure that effective territorial and therefore operational tasks are supported; this will be referred to as the social domain.

Ekblom (2011b) stresses that within CPTED itself, the core concepts are rather carelessly described. He also notes that a source of confusion arises because 'some core activities are about people preparing the environment', such as open sightlines or mechanical alarm systems, and others are 'operational prevention in the here and now', such as Natural Surveillance by residents or actually confronting intruders. Territoriality requires a combination of all 'Preparatory' and 'Operational' tasks to ensure the desired goal state is met. The literature sample used in this research reveals these are generally poorly defined and delivered in earlier framework attempts. It is equally important in that case to define the 'Preparatory Tasks' and 'Operational Tasks' for each principle to illustrate the importance of people and an emphasis of the social role in CPTED.

When considering scale, CPTED is sometimes thought to be limited in its effectiveness beyond the micro-scale of the building and Minnery and Lim (2005) claim that CPTED is only a local, intimate

and small-scale phenomenon. If they are to be of any practical utility, framework concepts, however, need to apply to a variety of scales from the micro-scale of the building to the meso-environments of neighbourhood's / housing estates. Aspects of Target Hardening may only be applicable to individual buildings and Activity Support will be most effective at a community scale, yet the remaining concepts would apply to either. Both forms of Surveillance, Image Management and Boundary Definition will be needed at a neighbourhood level, but will be less effective without the sustainability efforts at the scale of individual buildings. In order to ensure the framework is holistic at any scale, careful consideration of the social environment is therefore an important factor in any CPTED development.

CPTED has been subject to over 40 years of theoretical development, and to a certain extent refinement; this has produced a set of ideas that are undoubtedly tangled and difficult to define and interpret. This proposed framework benefits the reader through its structure alone that was built on the basis of previous decades of development, subsequently illustrating the definitions, purpose and collective goals with more clarity. The re-emphasis of Territoriality clarifies the integrated overlap, by recognising the role of physical design in creating and extending a sphere of influence and developing a sense of Territoriality through the remaining concepts. This framework has also touched upon the well-known issue of the social domain (or lack of) in crime prevention. The recognition of operational and preparatory tasks for each principle reinforces the need to consider the social dimensions of an environment before physical alterations proceed. These issues are extremely important to ensure a bottom up approach, site-specific, detailed evaluations and planning and most of all long-term sustainability.

The following section outlines the framework definitions for clarity and will aid the appreciation of how the concepts overlap and integrate. It encompasses many of the concepts already used by academics and practitioners; however, they are reformatted and re-emphasised for better articulation and understanding.

- **Goal – Territoriality** – Natural behaviour by which organisms characteristically lay claim to an area and defend it against members of their own species.
- **Concept 1 – Surveillance** – A strategy used to observe all users of the environment with the goal of identifying unauthorised persons and deterring unauthorised entry or illegitimate behaviour.
- **Concept 1: Principle 1 – Formal Surveillance** – Mechanical forms of surveillance, or physical security/patrol guards.
- **Concept 1: Principle 2 – Informal Surveillance** – The design of the physical and natural environment to create clear site lines and open spaces which provide opportunities for capable guardianship through observation of public spaces.
- **Concept 2 – Positive Reinforcement of Legitimate Behaviour** – Encouraging positive routine behaviour in public, semi-public and private space with the goal of enhancing community cohesion, making illegitimate behaviour more noticeable and therefore unacceptable.
- **Concept 2: Principle 1 – Activity Support** – Placing non-threatening activities in public and semi-public and private spaces to encourage respectful legitimate users during their routine activities.
- **Concept 2: Principle 1 – Image Management / Maintenance** – Encouraging the public to use attractive, clean open spaces and develop an attachment to the environment, maintenance of these tasks are vital for the sustainability of Activity Support.
- **Concept 3 – Access Control** – Strengthening the security of buildings and reinforcing spheres of private space with the goal of restricting access to crime targets or unauthorised areas and increasing the risk for offenders.
- **Concept 3: Principle 1 – Target Hardening** – Physical and Mechanical Locks and Alarm systems to restrict access and make buildings more resistant to attack.
- **Concept 3: Principle 2 – Boundary Definition** – Defining between private, semi-private and public space through physical and psychological barriers with the aim of making boundaries

known to potential invaders and restricting their access through the apprehension of being noticed.

All concepts within this framework when combined should contribute towards a collective function of Territorial Behaviour by providing opportunities for humans to operate within the physical environment. It is important to recognise here that these concepts contain both aspects of physical design and the way humans use space and must therefore work in concert to ensure sustainability and an effective territorial outcome.

6.3: Conclusion

Frameworks are essential for CPTED if multi-disciplinary organisations are to plan effectively and deliver sensible allocation of resources. This proposed framework allows organisations to gain perspective in the field of CPTED and can provide a powerful means of supplying focus and improvements in the effectiveness of crime prevention efforts. The analysis in this section has provided the basis for a deeper illustration of CPTED to uncover the practical and social necessities needed to ensure a sustainable crime-free environment. The identification of operational and preparatory tasks for each principle in the CPTED framework evidences the need to consider the social domain and to work in concert with planning of environmental design rather than as a bolt on accessory. Saville and Cleveland (1997) offered a ‘Second Generation CPTED’ to consider similar social aspects, but this is limited by its detachment from the planning process of First Generation CPTED; this will be discussed in more detail later in the thesis. These issues should be built in to the planning for design as part of a compulsory evaluation rather than an afterthought. The framework unpicks the tangled web of concepts currently causing confusion, to re-emphasise Territoriality and illustrate a running theme throughout each section of the framework; this should enable a clearer illustration to practitioners of the intended outcomes for CPTED.

Significant limitations have been identified in part B of this thesis, such as confusion over original contributions, lost meaning, disparities in definitions and terms and framework inconsistency. Also noted were inconsistencies in the development of contemporary CPTED, most of which was far removed from original intentions. The analysis has confirmed that theoretical and structural development of CPTED is and to some extent remains confused as CPTED has evolved through successions of disciplines and fields of practice, subsequently developing a rather unclear representation of the whole of place based crime prevention (Eckblom 2011b).

Restructuring and relabelling the CPTED framework to illustrate the operational and preparatory division within principles allows for improved emphasis of each component part. The movement of territoriality from a concept to a holistic goal is important, illustrating CPTED's conceptually overlapping nature. With Territoriality as an overarching goal and the recognition and importance of the operational component of CPTED planning, we come back to the work of Jeffery (1971; 1993). His original discussions and apparent intentions stated that

'designing the built environment can provide a behavioural message: The response of the individual organism to the physical environment is a product of the brain; the brain in turn is a product of genetics and the environment. The environment never influences behaviour directly, but only through the brain. Any model of crime prevention must include both the brain and the physical environment.' (Jeffery and Zahm, 1993, p. 330).

This reinforces the need to consider the social domain of CPTED and what conditions are present that could influence the individual organism or restrict ability to engage in Territorial Behaviour and with public space.

Having successfully explored the source of communication barriers within the academic knowledge base, the following section will explore professional's interpretation of CPTED and compare the proposed CPTED framework to this knowledge. Not only will this provide insight to the transferability of CPTED knowledge from research to practice but it may confirm that the source of

collaboration difficulties derives from poor academic dissemination of CPTED knowledge as was suggested in the literature review.

Part B: Section 3

CHAPTER 7: Professional Knowledge

In light of the inherent conflict and confusion found in the academic knowledgebase for CPTED, Chapter six successfully conducted a conceptual mapping process to explore the theoretical foundations of all concept definitions within the CPTED field. A new framework was proposed which restructured and re-emphasised the CPTED components to facilitate deeper conceptual understanding and a clear interpretation of the individual and collective goals of each part.

Whilst this has been revolutionary in the CPTED field, and an important milestone to begin alleviating the inherent difficulties CPTED has faced over the past 40 years, these findings represent the **academic** knowledgebase from which CPTED derived. Johnson et al (2014) argued that it was vital to explore the **professional** knowledgebase for CPTED and the way in which academic knowledge aligns with professional practice.

The aim of this section is therefore to provide a snapshot example of the professional knowledge base for CPTED, explore its similarity to CPTED in academia and explore the source of collaboration difficulties in the field.

7.1: Analysis

Through a questionnaire survey to professionals in the built environment field, this chapter explores the source from which professionals obtained information on crime prevention in the built environment. These include academic textbooks, guidance manuals and the like (see for example Crowe 2000; ACPO SBD 2014) etc. The knowledge base extracted (i.e. CPTED frameworks) were then used to establish similarities and differences between academic and professional knowledge of CPTED in terms of concept headings, definitions and the underlying theory of that knowledge which will be discussed in more detail later in the chapter. Academic terms extracted from chapter five were also explored with professional respondents to analyse their alignment with the framework proposed in chapter six, therefore increasing the integrity of the framework by ensuring that professionals

interpret the terms with full understanding. The analysis sought merely to establish a small ‘snapshot’ of the knowledge base available to and used by professionals when considering a crime prevention approach to their designs. Time and resources were too limited to consider an exhaustive study or the collection of a representative sample, therefore the research was limited to a questionnaire which was distributed mainly via the World Wide Web, through specialist interest forums as well as professional newsletters (See table 7.1)

Table 7.1: Questionnaire sampling

Interest groups *NOTE: These are not exhaustive	Newsletters *NOTE: These are not exhaustive
International CPTED Association (ICA) Royal Institute of Chartered Surveyors (RICS) Royal Town Planning Institute (RTPI) Urban Design Network Urban Planning Group Sustainable International Development & Sustainability Royal Institute of British Architects (RIBA) Landscape Design-Build Design and Construction Network American Planning Association	Royal Institute of British Architects (RIBA) Association of Chief Police Officers (ACPO) Royal Institute of Chartered Surveyors (RICS) Royal Town Planning Institute (RTPI)

The sampling frame for professional respondents had international coverage with responses from 9 different countries (See table 7.2). The questionnaire was targeted at, and completed by practitioners whose role included awareness of and use of crime prevention techniques in work which involved the planning, design or consultation on the built environment. This was ensured by targeting special interest groups via LinkedIn and by asking professionals if they considered crime prevention in their line of work. Professionals that took part in the study included Planners, Architects, Urban Designers, Crime & Security Consultants and Crime Prevention Design Advisors (CPDA's).

Table 7.2: Country and profession of respondents

Country	Profession						Total
	ALO/CPDA	Architect	Crime and Security Consultant	Planner	Real estate developer	Urban Designer	
Australia				1			1
Canada			1				1
Ireland		1					1
Netherlands			1				1
New Zealand						1	1

Philippines			1				1
Trinidad and Tobago				1			1
UK	6	5	7	6		1	25
USA		4	4	1	1		10
Total	6	10	14	9	1	2	42

Questionnaires were developed to cover two themes to explore A: If the knowledge base in practice reflected that in academia, and B: to assess professional's interpretation of the terms extracted in academia and thereby exploring professional's interpretation of the proposed CPTED framework in chapter six. This duality was important to establish if the diverse knowledgebase provided in academia had translated into professional practice and also to provide insight as to whether the proposed framework was understood in practice before empirical analysis was conducted.

The questionnaire asked both open and closed questions and consisted of just eight questions in total, although one section required respondents to consider a list of terms and select/comment on those in regular use (See questionnaire and responses in Appendix C). Respondents were asked to provide brief details of their profession and were then asked at what point in their field of work they considered crime prevention; where their knowledge base for crime prevention was drawn from in the form of policy documents or frameworks that they referred to; and how they used that knowledge base. The remaining questions related to the terminology issues. This allowed for a small number of CPTED frameworks and terminology used in practice to be collected and examined, highlighting how or if these frameworks were related to CPTED as defined in academia.

The proposed CPTED framework from chapter six was used as a tool to compare and contrast between the academic and professional knowledgebase. It was argued that this framework was representative of the academic knowledgebase due to the thorough conceptual analysis which had been employed in its development and that the terminology and definitions used demonstrated a holistic representation of CPTED as defined in academia. Using another framework from the academic field would have introduced bias and been unrepresentative due to the inherent conflict within many academic interpretations of CPTED.

The documents extracted from the questionnaire responses were classified as knowledgebase documents in the professional field. Analysis of the knowledge base documents was required to establish if the quoted material provided structured guidance on developing crime prevention in the design of the built environment, and ultimately if that guidance followed the concepts and principles of CPTED. Primary content analysis categorised documentation into those containing a crime prevention framework and those featuring crime prevention but not providing a framework for development within design or planning of the built environment. Documents in the second of these categories were excluded from further analysis whilst those that did contain a crime prevention framework were further examined using thematic categories.

The criteria for analysis therefore was that documents analysed needed to relate to crime prevention through the design of the built environment, contain more than one crime prevention concept, and give an unambiguous explanation or definition of its meaning in relation to crime prevention so that it could be assessed, followed and implemented into designs by professionals.

Using the proposed CPTED framework as a benchmark for textual categorisation allowed for each knowledgebase document to be assessed against CPTED concepts, principles and ultimately academic theory. Linking to academic theory was important since the proposed framework from chapter six recognised the importance of academic theory in facilitating the understanding and interpretation of CPTED components. It was therefore possible for concept headings within the professional knowledgebase to align with academic concepts due to textual similarities but when exploring the deeper theoretical meaning in terms of specifying the desired impact/goal of a CPTED concept, alignment was not always present. Definitions of this sort were therefore not aligned with academic concepts due to a lack of theoretical guidance.

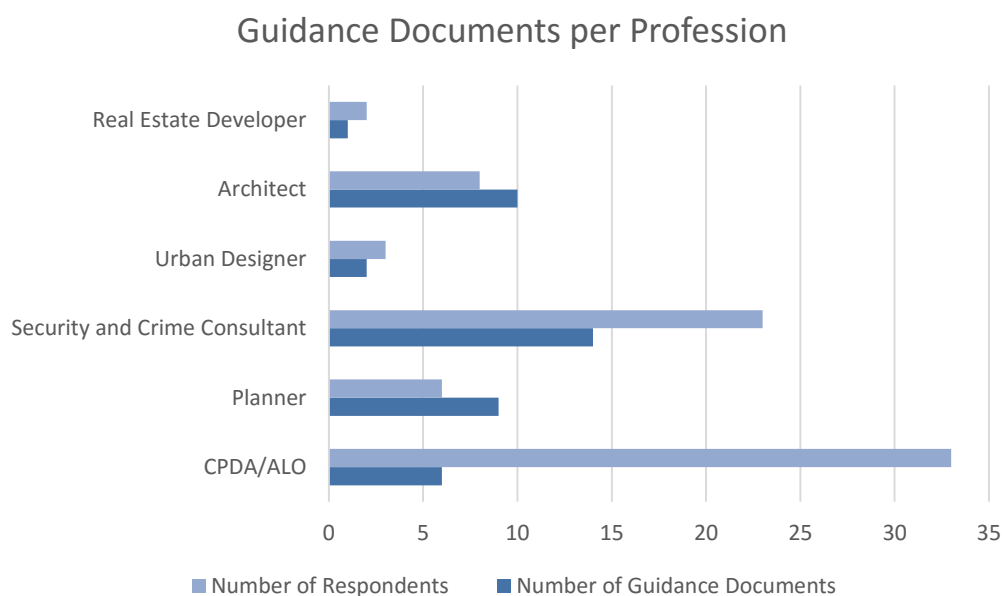
7.2: Results

7.2.1: Alignment of professional terms

The questionnaire survey had a small response rate which was to be expected. Whilst there was no definitive figure as to how many respondents the survey reached, only 42 professionals responded to the survey which reflected the general reluctance to engage in CPTED related work as expressed in chapter two. Completion of the questionnaires identified core material used by the participant when considering crime prevention in their line of work. The UK and the US most notably had the highest number of respondents, probably due to the familiarity with the CPTED concept which may not be as evident in other countries across the world.

Of those who did respond, professions varied from Crime Prevention Design Advisors (CPDA's), Planners, Crime and Security Consultants, Urban Designers, Architects, Architectural Liaison Officers (ALO's) and Real Estate Developers. A large proportion of documents extracted from participant responses came from CPDA's (See Chart 7.1). Note that these counts include duplications of documents based on practitioner's response and do not reflect the number of individual documents extracted.

Chart 7.1: Respondent professions and documents



It is clear from this chart that there is immediate variation and potential conflict in the professional knowledgebase. For all professions except Planners and Architects there are significantly more documents used than there are professionals who have responded, indicating that the guidance used is diverse.

A total of 40 different documents were identified in total with some duplication as evidenced in Chart 7.1, firmly indicating no industry standard being in place. Those that were most frequent included:

- Secured by Design Guidelines (16) (ACPO SBD 2010)
- Timothy Crowe's CPTED (5) (Crowe 2000)
- CPTED Security Handbook, Oakland Police (2) (Oakland Police Department [no date])
- Safer Places (5) (ODPM 2004)
- Defensible Space by Oscar Newman (3) (Newman 1972)
- The National Planning Policy Framework (2) (Great Britain Department for Communities and Local Government 2012)

Eleven (26%) respondents said they did not refer to or use any formal policy, framework or set of guidelines in relation to developing crime prevention in their work, one of which indicated that policies have '*changed so many times that I don't think I can name a specific policy I use*' (P4).

Using the inclusion criteria mentioned above, 27 (67%) of the 40 documents were excluded from further textual analysis since they contained no framework within the document. Although in many instances crime prevention was featured in the document, this was either a brief non-core mention, or the documentation was better described as a design guide more specifically related to available products that may aid crime prevention rather than a structured framework to incorporate crime prevention concepts into design. A further document was also excluded which did contain a framework but had no relevance to crime prevention.

Of the remaining 12 (30%) documents, frameworks were extracted from all that contained a) one or more crime prevention concepts, b) related to crime and the design of the built environment, and c) gave a definition of its meaning in relation to crime prevention. Only two frameworks analysed in this section were identical; Safer Places (ODPM 2004) and CABE advice on Design and Access

Statements (CABE 2006), however the CABE document highlighted Safer Places as the source of its framework and was therefore removed from the analysis to avoid duplication. The lack of identical frameworks also indicated that there is no universal framework being used in practice relating to crime prevention; as was the same in academia. All frameworks were generally different in content but similar in format, consisting of a variety of concept headings followed by explanatory text.

In order to explore links with CPTED in academia, as was the aim of this chapter, each of the 11 remaining documents were broken down to explore their concept headings and definitions in more depth. Where the framework provided a definition of each concept heading, these were individually extracted and without reference to the concept heading were conceptually aligned with the concepts and principles of the new CPTED framework. Alignment of a concept definition to a CPTED concept and subsequent principle was then possible.

Sixty-two thematic explanations were extracted from the 11 analysed frameworks (See table 7.3). The concept headings were removed from the analysis so not to influence the thematic alignment.

Thematic definitions are the explanatory text supporting each concept headings. These are used independently, therefore without influence by the concept heading to explore the theoretical foundation.

Table 7.3 Thematic definitions

This table examines the extracted definition of each key term and aligns it with a concept term from academia and a theory of crime and criminal motivation. The 'reason' column provides justification for the academic and theoretical alignment. Academic alignment is the academic concept in which the definition is most aligned, and theoretical alignment is the theory which is underlying the definition.

Definition	Academic Alignment	Theoretical Alignment	Reason
The placement of physical features, activities, and people in ways that maximize the ability to see what is occurring in a given space. This is often thought of as the only strategy of CPTED, but it is only a quarter of successful CPTED effort. An example of natural surveillance is a parking garage built with large panoramic windows facing a major street. This allows pedestrians and motorists to see into the parking area and detect criminal activity. This strategy works because criminals will not commit crimes in areas where they feel exposed to observers. In the event a crime does occur, there is a greater chance that it will be witnessed and reported to police.	Surveillance-Natural	Routine Activity	Discusses the reason why surveillance is important, the strategy and the anticipated effect on offending

The use of buildings, fences, signs, pavement, or other objects to express ownership or to clearly delineate the transition from public space to private space. For example, a small decorative iron fence can be placed around a front yard. The fence separates the public roadway and sidewalk from the front yard and makes a clear statement that non legitimate users are not welcome in the yard. This strategy works because it suggests there is someone present who has responsibility for the space and may observe criminal activity increasing the perceived risk to the offender.	Access Control- Boundary Definition	Rational Choice	Discusses real and symbolic barriers and the impact on the rational of the offender when deciding to proceed with a criminal act
The physical guidance of people coming and going from a space by the placement of entrances, exits, fencing, landscaping, locks, and other barriers. For example, walkway bollards may be placed near the entrance of a park to prevent vehicle entry but allow pedestrian entry. This strategy works because it creates a barrier against improper vehicle movement into the park. In the event vehicles do enter the park, the presence of the bollards makes the inappropriate behaviour clear to citizens passing by and they can notify police.	Access Control- Boundary Definition	Rational Choice	This definition discusses the impact that physical barriers has on the effort required to proceed with a criminal act and the risk it poses
The upkeep of an area demonstrates that someone cares and is watching. For example, a business may be regularly painted to maintain a clean appearance. This strategy works because of what is known as the “Broken Windows Theory.” This theory suggests that a neglected space will elicit mistreatment by people, while a maintained space will elicit proper treatment. This strategy directly impacts the fear of crime in a community due to resident’s perceptions of responsibility and caring in neighbourhoods.	Positive Reinforcement- Image Management/ Maintenance	Broken Windows	Discusses the impact of maintenance on perception and specifically refers to Broken Windows theory
Occurs when there are few obstacles to vision, areas of concealment do not exist and there is good lighting. This encourages people to feel safe – where they can see and be seen and encourages people to use the area.	Surveillance- Natural	Routine Activity	Discusses action and impact
Simply provided by people legitimately walking or driving through an area	Surveillance- Natural	None	Non Specific
Usually employed when natural surveillance alone cannot protect an area. This can take the form of CCTV and security patrols	Surveillance- Formal	None	Non Specific
Creating an environment where residents exercise a greater degree of control through restricting ease of entry. The hierarchy of four areas of space include Private, Semi Private, Semi Public and Public.	Access Control- Boundary Definition	Rational Choice	Talks about physical and symbolic barriers and the impact on criminal effort
Territoriality is achieved by design that allows for easy identification of an area and its purpose as the exclusive domain of a particular group or individual. A sense of ownership prevails even though the ownership may not be legal; it is more to do with the positive relationship of the group or individual with their environment, for instance a group of children who regularly use a play area. If an area and its use has to be questioned it can be classed as ambiguous and is less likely to be “owned” and cared for. These areas often facilitate anti-social behaviour and residents are less likely to challenge any behaviour that happens there.	Goal- Territoriality	None	Does not specify how
An offender prefers not to be seen when they are in a particular area with the intention of committing crime. They will avoid carrying out the offence where they can be seen or when they are visible leaving the scene. They will try to become anonymous in any situation and by designing the built environment in such a way as to promote people’s curiosity and ownership of an area it is possible to reduce the offender’s comfort of being in an area. A good example of this is a cul-de-sac where there is often a certain level of social control as residents are more likely to know each other and recognise strangers.	None	None	Non Specific
Most crimes are carried out when the opportunity presents itself and are not due to careful planning by the criminal. The chances of deterring the offender are largely determined by their ability to get away on escape routes without surveillance and without areas to hide and evade capture.	Boundary Definition	Rational Choice	Indirectly explains action and outcome
External barriers or strengthened perimeters to prevent a penetrative or close proximity attack.	Access Control- Target Hardening	Rational Choice	Briefly explains action and outcome of physical protection
Entrance arrangements which resist hostile entry.	Access Control- Target Hardening	Rational Choice	Discusses barriers and impact on attack

Structural measures that prevent access to or close proximity of unscreened vehicles to the building or space	Access Control-Target Hardening	Rational Choice	Uses physical (structural) measures or barriers to prevent access
Clear lines of sight around the building, the absence of recesses on the façade or elevations of a building. Uncluttered street furniture, well maintained and managed litter free building surrounds that reduce opportunity for suspicious hidden items and suspect activity to go unnoticed. CCTV and security guarding to provide formal oversight, orientating the building so that it overlooks public space and neighbouring buildings to support informal oversight by those who use and visit the location and well managed access points and reception facilities that offer less opportunity for intruders to go undetected and may deter them from taking further action.	Surveillance/Image Management and Maintenance	Routine Activity	Lines of sight. Litter free space similar to definition about encouraging the public to use attractive clean open spaces
People are present and can see what is going on	None	None	Non Specific
Methods are used to attract people and vehicles to some places and restrict them from others	Activity Support	None	Non Specific
Clear boundaries encourage community ownership of the space	Access Control-Boundary Definition	Rational Choice / Routine Activity	Specifies action and outcome
Good quality, well maintained places attract people and support surveillance	Positive Reinforcement-Image Management/Maintenance	Broken Windows	Specifies action and outcome
Use physical security such as locks and bolts to reduce opportunities for crime. This is particular relevant for unoccupied buildings and sites at risk of theft, criminal damage or arson.	Access Control-Target Hardening	Rational Choice	Specifies action and outcome
Controlling access will make it more difficult for offenders to commit a crime	Access Control	Rational Choice	Specifies action and outcome
Screening the use of exits makes it more difficult for an offender to leave the site after they have committed an offence	Access Control-Boundary Definition	Rational Choice	Specifies action and outcome
Some activities may be perfectly legal in most places but can cause illegal damage if carried out at historic sights. Visitors may be altered to the nature of the site and directed to places where activities may be carried out without any harm	None	none	Does not specify how
Items may be available at a heritage site which could be used as a tool or weapon in the commission of crime. It is important to ensure that these do not provide an easy option for an opportunistic criminal	None	none	Non Specific
Encourage local interest and involvement in the heritage assets by building up the sense that someone owns and cares for the heritage site	Goal-Territoriality	None	Non Specific
Offenders will be deterred from committing a crime where they may be observed doing so	Surveillance-Natural	Routine Activity	Impact of surveillance discussed
A sense of anonymity when visiting a site can encourage offending behaviour	None	None	Does not specify how to reduce anonymity
Encourage local people and interest groups to be aware of the heritage assets in their area, particularly those at risk. Inform them of what to look out for and how to respond. Encourage them to make regular checks informally such as walking past on the way to work	Surveillance-Natural	None	Does not specify impact
Make use of your own staff and other recognised authority figures to keep a look out for problems	Surveillance-Formal	Routine Activity	Specifies action and outcome
Valuables which are small or otherwise easily removable may benefit from being screened from sight or touch	Access Control-Target Hardening	None	Does not specify why or the impact
Items that are most likely to be attractive to an offender are those which are concealable, removable, available, valuable, enjoyable and disposable. If items or materials are identified as at particular risk, removing them may need to be considered	Access Control-Target Hardening	None	Does not specify impact

Identification of valuable materials and artefacts by unique markings may not only deter offenders but also increase the likelihood of apprehension of the culprit, the stolen items being recovered and a successful prosecution. Signage at the site to show that marking has been used well will act as a deterrent	none	none	Non Specific
Responsible auctions and magazines have policies about acceptable practice when buying and selling archaeological artefacts. They will cooperate with law enforcement and provide information about the seller to the authorities	None	none	Non Specific
Offenders are motivated to commit crime because they receive a personal gain. It is important to try and deny that benefit.	none	none	Non Specific
Some people may be provoked into criminal damage because they believe they are being unfairly treated. Removing these potential sources of aggravation would be helpful.	none	none	Non Specific
The ways in which you respond to offenders or potential offenders can influence the outcome of a situation	none	none	Non Specific
Reducing triggers for illegal and antisocial behaviour can have additional benefits of contributing towards a more welcoming environment for legitimate users which in itself makes the place more secure and successful	Positive Reinforcement- Image Management/ Maintenance	Broken Windows	Discusses action and impact
Membership of certain groups can contribute to undesirable behaviour which may cause damage to heritage assets. Work with these groups to identify and find solutions to problems	none	none	Non Specific
If a site is not maintained and criminal damage not repaired it encourages others to think that further criminal damage will be low risk of being caught and will be victimless as no one appears to care. It is important that the appearance of the site shows it is being actively maintained and regularly inspected	Image Management/ Maintenance	Broken Windows	Discusses action and impact
Local authorities have the power to set bye-laws that can restrict damaging behaviour. In addition, any owner can set rules or conditions for entry on a site. This can prevent inadvertent damage and reduce the risk of opportunistic crime	None	none	Non Specific
The laws protecting heritage sites and conditions of entry need to be known or they will have no deterrent effect	none	none	Non Specific
Alerting offenders to the impact that heritage crimes have on the community and future generations may reduce the likelihood of offending	none	none	Non Specific
Make it easy or visitors to comply with rules and expectations	none	none	Non Specific
The use of drugs and alcohol can be a contributory factor to many other offences. Consider if antisocial behaviour, theft or criminal damage may be linked to the availability of alcohol or to the convenience of consuming alcohol or drugs in that location. Consider what steps, such as conditions of access, may deter consumption.	none	none	Non Specific
Places with well-defined routes, spaces and entrances that provide for convenient movement without compromising security	None	None	Non Specific
Places that are structured so that different uses do not cause conflict	Positive Reinforcement- Activity Support	None	Does not specify actions
Places where all publicly accessible spaces are overlooked	Surveillance- Natural	None	Non Specific
Places that promote a sense of ownership, respect, territorial responsibility and community	Goal- Territoriality	None	Non Specific
Places that include necessary, well designed security features	Access Control- Target Hardening	None	Non Specific
Places where the level of human activity is appropriate to the location and creates a reduce risk of crime	Activity Support	None	Does not specify how
Places that are designed with management and maintenance in mind, to discourage crime in the present and future	Image Management/ Maintenance	None	Non Specific
Surveillance is about creating environments to keep intruders under observation. It aims to provide opportunities for people engaged in their normal daily business to observe the space around them.	Surveillance- Both	Routine Activity	Discusses actions for surveillance and the outcome on behaviour

Access control is about decreasing opportunities for crime, by controlling access to a crime target and by creating a perception of risk to an offender. Physical and symbolic barriers can be used to attract, channel or restrict the movement of people.	Access Control-Boundary Definition	Rational Choice Theory	Discusses real and symbolic barriers and the impact on the rational of the offender when deciding to proceed with a criminal act
Territorial reinforcement is about clearly defining private space from semi-public and public space in order to create a sense of ownership. The created ownership shows that the owner has a vested interest in the location, which in turn challenges intruders.	Access Control-Boundary Definition	Rational Choice Theory/ Routine Activity Theory	Discusses boundary definition and the impact this has on offender's perception of risk
Public perceptions are affected by the appearance of a place. A well-maintained urban environment is essential in sustaining confidence and helping to control vandalism, crime or fear of crime.	Positive Reinforcement-Activity Support/ Image Management and Maintenance	Broken Windows	Discusses the appearance of a place and the impact this has on perception of control
To deny access to crime targets and to create a perception of risk in offenders	Access Control-Both	None	Does not specify how
Keeping intruders under observation	Surveillance-Both	None	Does not specify how or why
To create or extend the sphere of influence so that users develop a sense of proprietorship and territorial influence	Goal-Territoriality	None	Does not specify how

Each of these concept definitions were considered against the new proposed CPTED framework and a corresponding concept and principle was allocated. Table 7.3 illustrates different levels of alignment through the shading of rows in the table. Those which remain white have the strongest alignment in that their definition is aligned with both an academic concept heading and a supporting theory. Those which are light grey illustrate definitions which can be identified within an academic concept but have no theoretical alignment. Those with dark grey shading have no theoretical or academic alignment and are therefore independent of any knowledge disseminated from academia.

As evidenced in table 7.3, not all concept definitions were both academically and theoretically aligned. Some definitions have textual similarities to academic principles of CPTED, often through key words such as 'real and symbolic barriers'. Yet when analysing the definition and their theoretical position in more depth, it was clear that many of the definitions could not be theoretically aligned due to their lack of explanation as to the impact or intended outcome of the concept being described.

Frameworks which contained no concepts/principles which could be both academically and theoretically aligned were therefore excluded from the final section of the analysis. Only 8 (20%)

documents were used for the final analysis containing a proportion of concepts which were both textually and theoretically aligned.

There was a total of 58 thematic definitions analysed from these 8 documents, 17 (29%) of which showed textual similarities with academic CPTED but no theoretical alignment. A further 17 (29%) thematic definitions showed no alignment with either academic CPTED or crime prevention theory and were therefore excluded from further analysis (See Table 7.3).

The six principles that were outlined in chapter six of this thesis were textually and theoretically aligned with concept terms used in academia. The academic terms were found to be separately described in only 24 (41%) different definitions in the professional documents that contained a crime prevention framework; many of those definitions were far from self-explanatory. No single framework examined covered all six CPTED principles of Formal Surveillance, Informal Surveillance, Activity Support, Image Management/Maintenance, Target Hardening and Boundary Definition.

Within the examined frameworks used by professionals, CPTED concepts are given uneven weighting with Access Control being described on 12 occasions, Surveillance 6 and Positive Reinforcement of Legitimate Behaviour 8, again reinforcing the excessive focus on target hardening methods and a lack of more socially oriented concepts in both academia and practice (See table 7.4).

Alignment of professional frameworks with academic theory, practical guidance and anticipated outcomes is vital for understanding. Documents highlighted by countries outside of the UK and the US referred to guidance that was developed for Western contexts i.e. secured by design guidelines. This is potentially problematic in that without a thorough understanding of the theory behind the design principle and the anticipated effect on behaviour this may have, design modifications based on UK evidence (for example), may have an entirely different effect in a country with exacerbating crime problems such as Trinidad and Tobago. This not only reinforces the importance of frameworks which are well understood, but it reinforces the vital need for a holistic framework that is not practical, so

local context analysis is a requirement in order to formulate prescriptive design solutions for the circumstances of that area.

Table 7.4: Concept alignment between academic and practice knowledge

Framework Source	Total concept headings	Surveillance-Formal	Surveillance-Informal	Positive Reinforcement-Activity Support	Positive Reinforcement-Image Management/Maintenance	Access Control-Target Hardening	Access Control-Boundary Definition	Does not align
CPTED Oakland Police	4	0	0	1	1	1	1	0
Safer Places	7	0	0	0	0	0	0	7
Newcastle Council Supplementary Planning Document	7	0	1	0	0	0	1	5
Crowded Places	4	0	1	0	1	3	0	0
Ministry of Justice Guidelines for CPTED in New Zealand	4	0	0	0	1	0	1	2
Heritage Crime Prevention	25	1	1	0	2	2	1	18
Safer by Design NSW	4	1	1	1	1	0	2	0
Timothy Crowe CPTED	3	0	0	0	0	0	0	3

It is clear from table 7.4 that there are more concept definitions within the analysed frameworks that do not align with academic concepts (68%) than those that do. Documents which are most strongly linked to academic CPTED concepts include the *CPTED Oakland Police Manual* (See Oakland Police Department, no date), although surveillance concepts are found to be missing from its content. Others include *Crowded Places* (See Home Office 2012) which had an uneven weighting across the three concepts of Surveillance, Positive Reinforcement of Legitimate Behaviour and Access Control. Also *Safer by Design NSW* (See Government of New South Wales 2001) guidelines contained principles which all aligned with academic theory but again had an uneven weighting across the three academic concepts.

In many respects this analysis mirrors the results from Chapter six which provided a clear indication of the lack of a universal framework and knowledgebase leading to a diverse array of unhelpful terms and descriptions causing potential confusion. It also confirms that there is a disconnect between CPTED knowledge in academia and professional practice.

7.2.2: Academic terminology alignment

As an additional indicator of the divergence between academic discourse and professional practice, respondents were asked to review a list of concept terms used in academic research which were extracted from academic CPTED frameworks in chapter five. This was to assess professionals' interpretation of academic concept headings, if they were familiar with the term and if it was used in practice. Table 7.5 illustrates professional responses to the concept headings extracted from academia and the conceptual alignment which they provided.

Table 7.5: Professional alignment of academic concept headings

Academic Terms	Familiar	Unfamiliar	Use in practice	Don't use in practice	Surveillance	Positive Reinforceme	Access Control	None of the above
Access Control	36	7	13	29	4	2	38	1
Access Management	31	3	29	6	5	6	29	2
Activity Generation	21	11	21	11	14	22	2	4
Activity Location	21	17	18	20	15	17	8	3
Activity Placement	18	18	13	24	11	18	8	5
Activity Programme Support	14	21	11	24	8	17	4	7
Activity Support	23	13	18	18	14	23	5	2
Available Control	5	22	3	24	4	3	9	6
Awareness of the environment	10	27	7	29	8	2	4	23
Boundary Definition	36	1	32	5	2	11	34	2
Broken Windows	34	5	25	13	2	19	0	14
Changes to the Physical Environment	33	1	28	6	11	22	14	7
Communitarianism	14	20	10	24	7	10	7	7
Community Building	30	4	27	8	7	24	6	9
Defensible Space	32	4	30	7	12	20	25	3
Deflecting Offenders	25	11	21	16	7	17	17	5
Environment	26	9	8	26	3	4	2	26
Environmental quality and sense of ownership	11	25	9	27	8	6	3	21
Exterior Maintenance	25	9	22	12	7	28	6	2
Formal Organised Surveillance	27	9	25	11	32	10	9	2
Formal Surveillance	33	4	30	7	31	4	7	0
Image	27	9	24	12	2	24	1	6
Image Maintenance	26	10	20	16	1	32	1	3
Image Management	24	13	21	16	2	32	1	3
Image Management and Maintenance	28	13	26	16	4	36	2	2
Image Milieu	9	23	5	29	2	14	3	9
Image/Maintenance	30	5	30	5	1	30	2	1
Image/Management	33	2	33	2	3	31	4	0
Informal Surveillance	30	5	29	6	28	9	2	1
Information Provision	24	13	23	14	8	16	8	14
Maintenance	28	9	20	17	2	36	1	0
Management and Maintenance	33	2	33	3	2	31	3	0
Maintenance of Surroundings	35	6	29	7	3	32	6	1
Milieu	20	17	18	21	5	13	8	11
Motivation	2	1	1	2	0	0	1	2
Motivation reinforcement	15	21	9	28	2	18	6	7
Movement Control	31	6	29	12	13	8	22	1
Natural Access Control	28	8	21	16	11	10	26	0
Natural Informal Surveillance	27	9	19	18	30	7	2	0
Natural Supervision	24	9	20	13	18	11	7	6
Natural Surveillance	25	4	34	6	31	10	7	0
Place Management	24	11	21	14	8	19	14	3
Quality environments	29	6	25	10	10	26	8	5
Real Surveillance	17	19	14	23	31	7	4	2
Reinforcing Natural Kingdom	2	31	1	31	1	9	4	7
Removing inducements to crime	29	7	24	13	8	21	10	8
Repair and Preservation	19	15	16	17	1	20	2	8
Signage and bans	29	7	23	14	11	21	16	4
Situational Crime Prevntion	27	10	22	15	10	14	12	9
Social Activity Support	20	14	19	14	8	17	2	6
Space Management	29	7	25	12	13	24	17	4
Surveillance	27	7	17	16	32	7	8	1
Surveillance of employees	33	3	32	11	33	12	8	2
Target Hardening	26	12	23	15	8	9	22	6
Target Hardening through Security Measures	26	10	22	14	10	10	29	2
Target Protection	20	17	19	18	11	7	23	6
Territorial Behaviour	25	9	20	14	15	16	13	3
Territorial Reinforcement	28	14	27	15	13	21	24	2
Territoriality	34	4	22	15	10	12	23	3

It is clear from this table that the most recognised academic concept headings by professionals include Access Control (36), Boundary Definition (36), Access Management (31), Broken Windows (34), Changes to the physical environment (33), Community Building (30), Defensible Space (32), Formal Surveillance (33), Image/Maintenance (30), Image/Management (33), Informal Surveillance (30), Maintenance and Management (33), Maintenance of Surroundings (35), Movement Control (31), Surveillance of employees (33), and Territoriality (34). This indicates a fairly even weighting of familiarity across the three academic concepts of Surveillance, Positive Reinforcement and Access Control.

The most unfamiliar terms included Reinforcing the Natural Kingdom (31), Awareness of the Environment (27) and Environmental Quality and Sense of Ownership (25). Reinforcing the Natural Kingdom was to be expected since this was previously identified as an ambiguous term in chapter six.

Concepts most used in practice were Boundary Definition (32), Defensible Space (30), Formal Surveillance (30), Image/Maintenance (30), Image/Management (33), Management and Maintenance (33), Natural Surveillance (34), and Surveillance of Employees (34). All these concept terms were expected due to their familiarity by practitioners.

Concepts which were least used in practice include Reinforcing the Natural Kingdom (31), Motivation Reinforcement (28), Image Milieu (29), Environmental Quality and Sense of Ownership (27), Environment (26), Communitarianism (24), Awareness of Environment (26), Available Control (24), Activity Programme Support (24), Activity Placement (24), Access Control (29). All these concept headings are to be expected due to their lack of familiarity by practitioners, however Access Control as a term was not used much in practice which was surprising since it was one of the most recognised concept headings by practitioners. It is assumed that this may be because in practice, target hardening measures as traditional forms of crime control are used most and often illustrated through terms such as Defensible Space, Deflecting Offenders, Target Hardening and Territoriality (See table 7.5). Access Control as a concept heading is both physical and social in its definition and encompasses all aspects of increasing the effort required to proceed with a criminal act either through

hard security or psychological barriers. This may therefore be overshadowed by more definitive terms such as Territoriality or Target Hardening which are more directly associated with blocking access to targets and strengthening the shell of properties.

What is also noticeable from this table is concept headings associated with territoriality such as territorial behaviour and territorial reinforcement which are fairly evenly distributed across the three main concepts of Surveillance, Positive Reinforcement and Access control. Again, this reinforces the notion that this term should be removed as a concept from the framework and repositioned as an overarching mechanism to achieve the goal of crime prevention as suggested in Chapter six.

In terms of practitioner's alignment of academic concepts, table 7.6 illustrates the most aligned concept for each of the academic terms.

Table 7.6 Professional alignment of academic terms

Academic Terms	Professional Alignment
Access Control	Access Control
Access Management	Access Control
Activity Generation	Positive Reinforcement
Activity Location	Positive Reinforcement
Activity Placement	Positive Reinforcement
Activity Programme Support	Positive Reinforcement
Activity Support	Positive Reinforcement
Available Control	Access Control
Awareness of the environment	None of the above
Boundary Definition	Access Control
Broken Windows	Positive Reinforcement
Changes to the Physical Environment	Positive Reinforcement
Communitarianism	Positive Reinforcement
Community Building	Positive Reinforcement
Defensible Space	Access Control
Deflecting Offenders	Access Control + Positive Reinforcement
Environment	None of the above
Environmental quality and sense of ownership	None of the above
Exterior Maintenance	Positive Reinforcement
Formal Organised Surveillance	Surveillance
Formal Surveillance	Surveillance
Image	Positive Reinforcement
Image Maintenance	Positive Reinforcement

Image Management	Positive Reinforcement
Image Management and Maintenance	Positive Reinforcement
Image Milieu	Positive Reinforcement
Image/Maintenance	Positive Reinforcement
Image/Management	Positive Reinforcement
Informal Surveillance	Surveillance
Information Provision	Positive Reinforcement
Maintenance	Positive Reinforcement
Management and Maintenance	Positive Reinforcement
Maintenance of Surroundings	Positive Reinforcement
Milieu	Positive Reinforcement
Motivation	None of the above
Motivation reinforcement	Positive Reinforcement
Movement Control	Access Control
Natural Access Control	Access Control
Natural Informal Surveillance	Surveillance
Natural Supervision	Surveillance
Natural Surveillance	Surveillance
Place Maintenance	Positive Reinforcement
Quality environments	Positive Reinforcement
Real Surveillance	Surveillance
Reinforcing Natural Kingdom	Positive Reinforcement
Removing inducements to crime	Positive Reinforcement
Repair and Preservation	Positive Reinforcement
Signage and bans	Positive Reinforcement
Situational Crime Prevention	Positive Reinforcement
Social Activity Support	Positive Reinforcement
Space Management	Positive Reinforcement
Surveillance	Surveillance
Surveillance of employees	Surveillance
Target Hardening	Access Control
Target Hardening through Security Measures	Access Control
Target Protection	Access Control
Territorial Behaviour	Positive Reinforcement
Territorial Reinforcement	Access Control
Territoriality	Access Control

Of note here, are the concept headings in bold which represent components of the proposed academic framework from Chapter six. Results indicate, following a consensus of professional responses that the six principles of Formal Surveillance, Informal Surveillance, Activity Support, Image Management and Maintenance, Target Hardening and Boundary Definition were suitably aligned with

the concepts of Surveillance, Positive Reinforcement and Access Control. This result increases the integrity of the analysis conducted in chapter six which aligned concept definitions with theory of crime and criminal motivation to subsequently restructure and re-emphasise the CPTED framework. The remaining terms in the table also confirm the theoretical alignment which was conducted in chapter six.

7.3: Conclusion

This chapter of the thesis claims to do nothing more than present a small snapshot of practitioner activity in the field of applying CPTED to the built environment. It was hoped to obtain a larger sample but the relatively low response rate may be considered a true reflection of the lack of engagement from professionals in the field.

The results reinforce the structure and reemphasis of the proposed CPTED framework in chapter six and also confirm that there is disconnect between academic research and practice. The simple result of 42 practitioners providing 40 individual crime prevention guidance documents suitably examples the diversity within built environment professions in terms of incorporating crime prevention within design and planning. With the majority of these documents actually failing to provide a recognisable and functional crime prevention framework those practitioners having to use such material are left in an unavoidable position with little help available. Johnson et al (2014) confirmed that this demonstrates a significant lack of clarity stemming from academia which can be seen as the knowledge provider for all CPTED guidance.

It may be argued that CPTED in practice is unlikely to align directly with academia as some adaptation would be required for the development of a practical tool and also that the framework proposed in chapter six may be seen as a “new” framework. It is stressed however that the framework proposed in chapter six introduces no new concepts, although the terminology is adapted somewhat to reflect the knowledge gleaned over the past 42 years. The process of alignment carried out did not seek distinct alignment in terms of concept headings but rather of definition and theory, since there are known and sometimes obvious discrepancies in the terminology used. Definitions within

frameworks extracted from professional documents had inter-rater reliability since the process for interpretation was conducted by three independent researchers in which a collective conclusion was drawn for each as to whether the concept definition proposed bore any significance to concept themes in academia. The alignment process was strict in that it depended upon practical guidance, anticipated outcome and evidence of underlying theory. These elements were considered vital for providing suitable guidance and direction to a multi-disciplinary field with limited specialist knowledge.

The results of this confirmed that there was significant conflict and disconnect between the academic and professional knowledgebase for CPTED. Those frameworks that contained definitions which were identifiable with academia in terms of their anticipated goal and underlying theory were aligned with the academic framework proposed. This process of alignment would produce the same results if the professional frameworks were aligned individually to every single framework extracted from academia since the new framework merely brings together and restructures all other existing frameworks.

The framework concepts were also incorporated into the questionnaire to professionals to assess practitioners' understanding of academic terms (see table 7.5). The results indicated a significant variation in the interpretation and understanding of many academic concept headings. Most noticeable was the firm alignment of the six principles from the proposed CPTED framework in chapter six which only reinforced its integrity.

7.4: Summary of Part B

Part B of this research has explored CPTED in academia and in professional practice and has arrived at a solid conclusion that CPTED guidance is extremely diverse, conflicting and a potential source of confusion. CPTED is a multi-disciplinary concept which requires input from a diverse range of actors; it is not something to be done by the individual, nor should it be an afterthought when crime rates become problematic. CPTED is a necessary part of the overarching process of urban design (Johnson et al 2013; Poulsen 2013) and therefore it naturally follows that integration of CPTED principles into

built environment practice requires thorough understanding and cooperation between the diverse range of actors involved in the process.

Part B of this thesis has suitably examined academic knowledge, and then briefly explored the knowledgebase drawn upon by professionals in the field. In both academia and professional practice, a holistic, universal and clear framework for preventing crime through the design of the built and natural environment has been lacking. In light of this, the potential risks posed to crime prevention and community safety are self-explanatory. If CPTED is to be acknowledged as a valid and worthwhile design component, then a common language through a common knowledgebase must be brought to the fore, without dictating outcomes or failing to acknowledge the value of flexibility and innovation which is equally essential. A conclusion is drawn from Part B of this thesis that such partnerships would struggle to communicate effectively where there is such lack of a common language and understanding. Whilst perhaps not so damaging on a local scale where practitioners and local government can converse easily on an informal and formal basis; larger barriers present themselves when greater geographical scales come to the fore and where consistency of practice is also an issue.

The ambiguity of the CPTED knowledgebase as it was risks severely weakening the development and application of crime prevention in the built environment. Without an established, evidence based and theoretically grounded guidance framework, it is almost inevitable that diversity in approaches will follow and the risk of creating potentially criminogenic environments will increase. This may lead to practitioners losing sight of core CPTED concepts, weak prevention focused design and a risk of practitioners becoming disillusioned by the boundaries of CPTED.

This section of the research proposed a potential remedy to the lack of a holistic CPTED framework through the development of a deeper and further integrated framework which is evidence based and theoretically grounded. Illustrating the divisions between operational and preparatory tasks within principles is a step forward which allows for improved emphasis and visibility of theory driven

components. Additionally, the movement of territoriality from a single concept to a holistic goal is important, allowing for the mechanisms provided by all 3 concepts to be focused on a suitable aim.

The proposed framework is not yet conclusive and it is recognised that there are further constraining issues upon the overall effectiveness of the CPTED concepts which are beyond the scope of this PhD (See Ekblom 2011b). The framework also requires a deeper form of empirical analysis to confirm its transferability to built environment practice. What is also recognised is the need to consider on a deeper conceptual basis the integration of more socially ascribed variables in CPTED planning. This will support the identification and development of operational tasks to increase the sustainability and longevity of CPTED approaches and will be approached in the following chapter.

Part C: Section 1

CHAPTER 8: Social Sustainability

Until now, CPTED has been largely situational in nature; relying on theories which support the placement of specific features/designs which discourage crime and reduce the opportunities available to proceed with a criminal act. Second Generation CPTED was proposed by Saville and Cleveland in 1997 as an extension to address many of the limitations to first generation CPTED, particularly with regards to the absence of social context in CPTED planning as discussed in Chapter two. Due to the lack of a clear framework for Second Generation CPTED, as well as the absence of a clear theoretical foundation or evidence base and no direct link to First Generation CPTED or even Environmental Design, further work is still required to increase the social component of CPTED and ensure that it is theoretically and practically relevant to the CPTED developments which have occurred over the past four decades.

It is proposed in Part C of this thesis that a thorough, structured and evidence based framework for the analysis of social conditions is still needed prior to CPTED planning and implementation. CPTED design needs to be both context specific and socially sustainable and requires the flexibility and capacity for innovation to develop prescriptive physical and social changes through CPTED principles.

8.1: The Importance of Context

As discussed in chapter two, ensuring that CPTED is prescriptive and fully adapted to the social context of the community has a significant positive impact on the sustainability of crime reduction efforts and the sustainability of the larger community (Poulsen 2013). Context is however a potentially infinite term and one which has few definitions in academic research.

Marlow and Pitts (1998) clarify the importance of context in terms of crime prevention by claiming that *“if we are to incorporate crime prevention strategies we have to make it clear what it is: in a language people can understand, in the context of their concerns and crime”*(1998:64). This view is

supported by many academics in the CPTED field who argue the importance of social context in crime prevention planning (See Brown & Altman 1981; Mayhew 1981; Merry 1981; Taylor et al 1984; Cuba & Hammon 1993; Cozens 2008; Grohe 2011). Therefore, without a structured process of exploring community concerns, crime prevention interventions are likely to be less sustainable or effective.

However, representative statistics are, in order to be sustainable, crime prevention strategies must address issues beyond the rate of crime, to further understand the complexity of the social environment and the dynamics which have enabled crime and other social problems to manifest. Crime statistics are often of great interest to the general public because they appear to report on ‘real’ crime (Sutton et al 2008) yet the knowledge and complexity of such crime problems are not adequately understood by the receivers of this information, providing a minimal perception of crime fluctuations which also applies to its use and value towards crime prevention initiatives. Prevention policy needs to move beyond the fixation on the crime itself and seek to address all the contributing drivers of crime, and to do this requires a deep understanding of the context in which it is to be applied. Social context in this thesis therefore refers to any external factors within the environment that affect crime, fear of crime and the subsequent quality of life of individuals.

8.2: Sustainability

As discussed in chapter two, in order to ensure a truly sustainable crime reduction effect, a community must in itself be socially sustainable, or at least have measures in place to make it sustainable; perhaps through the implementation of prescriptive CPTED interventions. Sustainability is vitally important for crime prevention initiatives due to economic and ethical issues if they fail. Carrying out CPTED planning without a full understanding of the social context and the sustainability of the social environment is a potential hindrance to the longevity of any CPTED scheme. Lack of social context knowledge in CPTED planning may also fail to recognise potential issues in the local environment which may restrict effective CPTED intervention.

With reference to chapter two and the discussion on the Local Agenda 21, Sustainability has become a 'buzz word' for planning and urban design fields and is enshrined in law (in the US) through Environmental Impact Assessments (See US Congress 1970); yet no link to crime or crime prevention has been made a statutory requirement in this development and it therefore remains an optional consideration for planners without compromising efforts of sustainable development (Cozens 2002). That issue, together with the contradictory guidance frameworks for CPTED planning as reported in chapter five and seven, means that there is a significant risk of reducing future engagement from professionals across built environment fields. It is therefore without doubt that CPTED requires a more formalised relationship between CPTED and sustainability to ensure that CPTED planning is both sustainable and adaptive to the social context of the community. Not only will this increase the longevity of crime prevention efforts but it may also provide a more transferable framework for CPTED to have a statutory footing in planning policies across the world which is arguably needed.

The aim of this chapter is therefore to establish what creates and maintains a socially sustainable community to provide suitable guidance for the effective consideration of the social environment when implementing crime prevention in communities.

Some key words require clarification at this stage to set the scene of this chapter and ensure that its intentions are clear. 'Sustainability' in this thesis is intended to represent the sustainability of a community in terms of its social constructs and longevity of the physical and social fabric. That is, what creates and maintains a socially sustainable community and how do these characteristics impact upon human behaviour and perception of their environment. 'Social' in this sense, refers to the relationships which are inherent in community structures that are needed to sustain positive crime prevention effects e.g. cohesion, participation, ownership etc. The research therefore set out to explore indicators which define the social sustainability of communities and the impact that this can have upon the behaviours of its residents.

8.3: Analysis

The method for analysis used in this section of the research adopted a conventional content analysis approach for exploring academic literature on ‘social sustainability’. An empirical survey was rejected and content analysis was chosen as the most suitable methods for a number of reasons. First, a participant sample would have been too large given the breadth and complexity of sustainability as a concept and it was therefore decided that due to the volume of potential stakeholder groups of relevance, it would be too difficult to reduce to a manageable and meaningful sample. Second, given the experience of professional surveys in chapter seven, serious practical and logistical difficulties in contacting stakeholders and ensuring a response within the specified timeframe for this section of the research was deemed risky. Last, this section of the research is largely exploratory in nature in that it relies on contributions from academics and professionals worldwide to develop insight to what may be considered important indicators for analysis. The synthesis of information relied somewhat on the researcher’s prior knowledge of crime and CPTED in order to establish relationships between the themes and their position in social context analysis for CPTED planning. Questions within an empirical survey would not therefore lend itself to meaningful information on a consistent basis across such a wide range of respondents. Therefore, academic literature was considered to give a reliable and holistic overview of the knowledge and perceptions of the academic community. An empirical component for exploring indicators of social sustainability for context analysis is discussed in chapter eleven.

Social sustainability was chosen as a focus due to the relationship between crime and the social environment. Communities which are high in crime are potentially degenerative in that they often exceed a threshold in which the community enters social decline and outmigration is increased (See Shaw and McKay 1942). Similarly, crime is a particularly social phenomenon and occurs as a result of changes in behaviour and the various physical and social drivers behind it. Sustainability in general is ambiguous in nature, predominantly associated with environmental concerns and ‘green’ issues which was the original basis for the sustainability movement (See Brudtland report 1987). However, it is demonstrated in the texts that there has been a movement over time towards incorporating social

sustainability into sustainable communities across the other definitions, in order to become ‘truly sustainable’ (Maliene and Malys 2009; Meadows et al 1992).

It was therefore argued that social sustainability would be the concept focus for identifying indicators to explore the social context of communities. It was anticipated that these indicators would be conceptual in nature due to the analysis being predominantly academic based, yet this would provide for a holistic framework to be explored further in the field (this will be discussed in more detail later in the chapter).

The documents explored for this study consisted of collated published literature on ‘social’ sustainability. This focus is justified by the requirement to evaluate ‘social’ context as the means for deeper and more sustainable crime prevention application. Specific key words and phrases were explored which were considered to suitably capture a broad range of literature on social sustainability and sustainable communities. Search engines used in the literature scope are listed in table 8.2, these were considered to best reflect the source of sustainability literature in the academic field. The number of hits for each search phrase can be found in table 8.1

Table 8.1: Search terms and hits

Search terms	Comments	No of hits
“Sustainable communities”	Avoided those concerned with environmentalism / “green” issues and did not appear to have “social sustainability” at the core of the text	86
“sustainable communities” and “successful”	Interest in “housing” and “crime” references. Did not look at “schools” as seemed concerned with curriculum	21
“sustainable communities” and “criticisms”	Emphasis on environmental issues, some results for “architecture”, “transportation” and “heritage”	17
“sustainable communities” and “characteristics”	Turned up a lot on “tourism”, “ecology” and “rural environments”. Not great return.	67
“sustainable communities” and “limitations”	Heavy environmental/ecological focus. Lots on sustainability and some on tourism. Not great return, 1 found	140
“sustainable communities” and “social sustainability”	Ecology and biodiversity came up a lot as well as other ‘natural’ themes e.g. fisheries and forestry	720
“creation of sustainable communities” and “social sustainability”	Turned up a wide variety of results, only one of which was relevant (repeat of existing reference)	46

“maintenance of sustainable communities” and “social sustainability”	General management guides and content about physical geographies e.g. natural disasters	25
“sustainable communities” and “crime”	Public policy came up a lot but only read those with a specific interest in sustainable communities	42
“sustainable communities” and “fear of crime”	Only 4 results. Two relevant and two not, both are repeats of existing references	4
“sustainable communities” and “built environment”	Particular focus on planning, architecture and climate change. Planning is not focused enough.	96
“sustainable communities” and “urban design”	More urban design focused towards architecture than social sustainability but interesting book on governance	136

Table 8.2: Search Engines

Electronic Databases	JSTOR Social Science Citation Index SSRRN- Social Science Research Resource Network Springerlink Web of knowledge Web of science WorldCat WorldWideScience ProQuest Research Library Scopus EBSCO host
Core bibliographic databases	GEO base Sustainable organisation library
Internet searches	Google Google Scholar

Exploration of the documents sought to establish what features fit into the broad catchment of sustainable communities. Therefore, it was pertinent to the analysis that a thorough and expansive search of the literature was achieved. Exclusion and inclusion criteria shown in Table 8.3 were generated to narrow down the huge body of work uncovered in initial literature scoping. These criteria specifically eliminated reviews (i.e. book reviews/ journal reviews) from the search for two reasons: first to narrow down the vast body of literature and second to avoid making judgements based on the opinion of other researchers. The justification for the timeframe comes from the publication year of the world commission and environment report ‘our common future’ (1987) which brought the concept

of ‘sustainable development’ into the purview of governments and publics around the world.

Sustainable development came to be seen by many as a solution to urgent environmental and societal problems where business-as-usual has failed.

Table 8.3: Inclusion and exclusion criteria

Parameters	Inclusion Criteria	Exclusion Criteria
Location	Worldwide	-
Language	Studies written in English	Studies not written in English where no translation could be obtained
Time Frame	Studies published from 1987 (Post Brudtland)- 2014 (end of analysis)	Studies published before 1987 (Pre Brudtland)
Study Type	i) ‘Social Sustainability’ has a heavy focus ii) Urban focus	i) There is another primary focus as opposed to ‘social sustainability’ ii) Rural focus
Source	Textbooks Journals Books	Book Reviews Journal Reviews Any non-original sources

Studies explored were sourced from across the world since crime prevention theory needs to be applied successfully on a global scale. It was also recognised that social context varies on many geographic scales across the entire globe and therefore a holistic catchment of published literature on social sustainability must be explored to capture the diversity of geographical areas in which it could be applied. Therefore, when looking at the *context* of crime prevention in the parameters of socially sustainability this must also have global scope.

This study required documents whose main focus was social sustainability but whose subject matter was specifically in the context of exploring its meaning. The inclusion and exclusion criteria in table 8.3 narrowed hits down to 76 documents. A brief scan of abstracts from each of the hits highlighted 17 documents which met the inclusion and exclusion criteria and were therefore suitable for the analysis

Using Conventional Content Analysis, initial scoping of the text revealed six broad categories by which to classify the literature. These categories helped during the extraction of themes by distinguishing the context from which they derive. It also helped to differentiate between actions and

outcomes of socially sustainable communities as well as identifying areas where social sustainability was lacking.

- Motivations of citizens and their governments to achieve socially sustainable communities
- Promises of socially sustainable communities
- Aims of socially sustainable communities
- Requirements of socially sustainable communities
- Limitations of socially sustainable communities
- Emerging framework for the implementation of socially sustainable communities

The goal here was to identify and categorise all aspects of socially sustainable communities in order to develop an operational social context model which can be incorporated within CPTED applications. It was therefore logical to read the transcript and highlight all text that fell within the initial categories. These categories were chosen due to their breadth, as they covered many stakeholders including the national and local government, local residents and the business community. Table 8.4 shows how the content analysis was conducted in order to quantify the qualitative data and conduct a thorough and effective content analysis of the literature.

Table 8.4: Content Analysis Actions

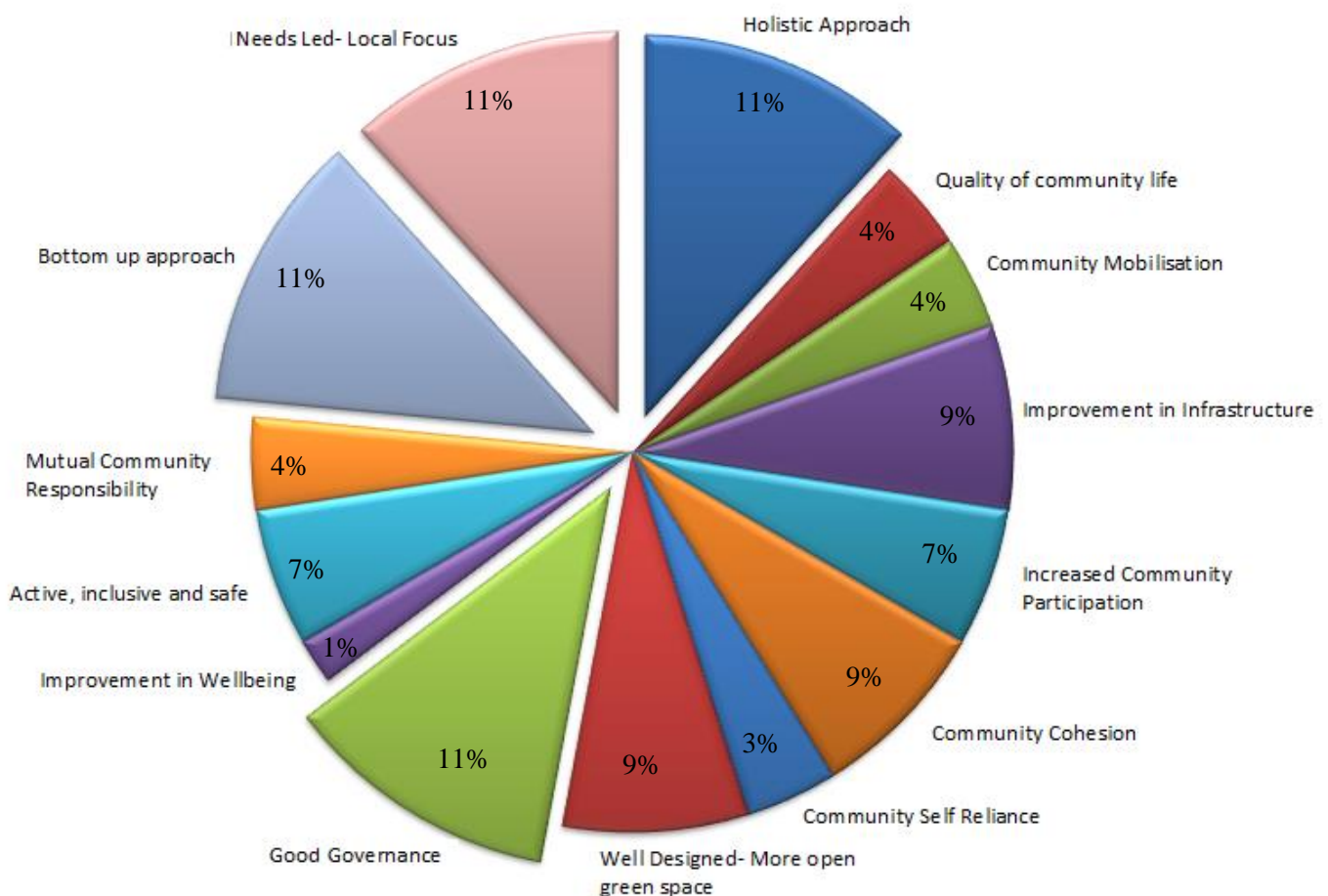
Steps for conducting content analysis	Action
Level of analysis	This research will look for sets of words or phrases as opposed to a single word. This is done to achieve a greater appreciation of what the author is trying to say e.g. “greater social wellbeing” as opposed to “wellbeing”.
Number of concepts to code for	There were six defined categories. The text was coded to a category based on ‘best fit’. Where there were two or more categories which have highlighted the same feature then it was allocated to where it was used most frequently in the literature. This allowed for more specific analysis of the text.
Existence of concept or frequency of concept	The existence of a concept highlights it as a feature. Frequency was then used to establish what the most important features are based on how often they appear in the text. It was also used when a feature appeared in more than one category as a method of deciding which category was best suited.
Distinguishing amongst concepts	Once the initial coding was done, different features were grouped together depending on the level of similarity. E.g. ‘community wide participation’ and ‘greater public participation’ can come under the umbrella term of ‘increased public participation’. In some instances, sub categories were formed.

8.4: Results

During the content analysis 15 features were drawn from the literature (See Figure 8.1); as expected, some were more frequently cited than others. The design of the built environment is the foundation of CPTED and broader Situational Crime Prevention efforts and this research confirmed that it is also a primary motivation, requirement and aim of a socially sustainable community.

All of the identified indicators were also found to have inherent links to CPTED, the findings of which were incorporated into an operational social context model to be used at the pre-planning phase of CPTED interventions. These relationships will be discussed individually throughout this chapter.

Figure 8.1: Sustainability features



Concepts more frequent in the literature were generally broader delivery *requirements* of socially sustainable communities, such as Holistic Approach, Bottom-up approach, Good Governance and Needs Led-Local Focus. Whilst all were vitally important, none were mutually exclusive as indicators of a socially sustainable community but better described as delivery requirements needed to facilitate and maintain sustainable community (including CPTED) interventions.

The following sections will report on each category identified within the analysis, the broader social sustainability context from which it derives and its relationship to crime prevention and subsequently CPTED.

8.4.1: Holistic, Integrated Approach

There is a common misconception that sustainability is primarily focused on environmental concerns at the expense of wider social conditions (Parkinson and Roseland 2002). Whilst this may have been the case in the past, sustainability must now be all encompassing and multi-disciplinary in scope which is also vitally important to CPTED planning. Successfully creating and maintaining a socially sustainable community is therefore dependent upon the delivery of a *holistic, integrated approach*' (Srinivasan et al 2003; Bokalders and Block, 2010); e.g. incorporating all aspects of sustainability and giving equal measure to all factors. Crime features largely in the success or failure of a socially sustainable community and is therefore important to be categorised as a factor worthy of equal consideration. The interconnectedness of social sustainability issues, economic growth and environmental protection is becoming increasingly obvious (Phillips et al 2013); therefore, updated, all-encompassing approaches are needed in recognition of this reality. This indicator highlighted an important overall requirement of sustainable communities and therefore required exploration in the pre-planning phase to ensure that CPTED interventions were holistic and integrated.

8.4.2: Bottom Up

A holistic, integrated approach will ensure a democratic way of working in terms of communities, but a more collaborative approach that is *bottom up* in nature is considered to work much more

effectively (Evans et al 2004). This is in comparison to traditional governmental processes and subsequent crime prevention interventions which are often ‘top down’ (Kelly et al 2005; Grohe 2011) and relatively unconcerned about the involvement of civil society actors in policy or strategy development. The top down more traditional paradigm is based around a group of elected officials and selected individuals working on development projects from an ‘outsider looking in’ perspective. Newer paradigms promote community empowerment where residents are at the centre of the development process, often referred to as a grassroots philosophy (Aigner et al 2001). For communities to be sustainable, individuals need to be involved in how their community is run and are likely to possess the most knowledge of the local context (Maliene and Malys 2009).

This indicator reinforced the importance of bottom up grassroots approaches and the importance this can have on the longevity of initiatives. This was therefore incorporated into the model for social context analysis in CPTED planning.

8.4.3: Good Governance

Although top down governmental approaches to all aspects of socially sustainable communities is not desirable, governance is an integral part of achieving policy aims. Included in this remit is the creation of new forms of space or modes of participation. Brownhill and Carpenter (2008) stress that good governance is essential in achieving the goals of socially sustainable communities. The sustainable communities’ rhetoric suggests that different levels of government, at different spatial scales, will co-operate through joined-up strategies and collaborative implementation (Brownhill and Carpenter 2008) to provide a more holistic strategy of governance. In particular, the local government will be the most informed level at which decisions can be made. Participation and cooperation of local authorities and their citizens is essential, whilst good governance at all levels is a precondition for achieving sustainable communities – particularly at a local level (Evans et al 2004). It must therefore follow that community engagement and exploring the local context is a precondition of CPTED planning in that the opinions and contributions of communities towards CPTED interventions will undoubtedly increase the sustainability of crime reduction effects.

The jurisdictional powers and proximity of local governments make them one of the effective and critical agents in advancing a community towards sustainability since they have the power to incorporate sustainability principles into policies and crime prevention into sustainable development policies. This allows them to make ambitious targets more attainable (Quaid 2002). Following the Crime and Disorder Act 1998, a new emphasis on partnership governance saw crime prevention responsibilities move away from formal policing bodies towards local communities and citizens. As the conditions of local community's change, the behaviour of individuals can also change and to prevent behaviour from becoming a problem now and in the future, these changes must be monitored by responding to individual's needs and local circumstances more effectively. Good governance is essential for the prevention of crime to coordinate a multi-agency effort and the acquirement of relevant expertise to encompass the complexity of contributing factors. Good governance should however be coordinated to facilitate the process of a bottom up approach and ensure a needs led, local focus is maintained at all times which also naturally applies to CPTED interventions.

8.4.4: Needs Led, Local Focus

The Local Agenda 21 claims that local government is 'the level of governance closest to the people'. Local government is the principle motor for change and therefore best placed to pursue the sustainability goal of 'thinking globally, acting locally' and mobilising local agencies and resources to secure objectives (Evans et al 2004). Community level is where most initiatives are implemented, particularly in the field of crime prevention and CPTED, local government in this sense is better equipped to formulate policies and achieve goals as it is better located and better c with local community residents (Rees and Roseland 1998). Local authorities should be used by national governments to lead change and provide better ways of achieving access to local context.

In many instances of CPTED planning, multi-agency engagement is limited due to communication breakdown and a lack of shared priorities. It should be the responsibility of the local Government to ensure that a coordinated effort is maintained and to enforce a shared responsibility of mutual goals so that no aspect of socially sustainable communities is discredited. The lack of resources available to local governments is an even bigger reason for increasing citizen empowerment. Governance alone

cannot solve the problems facing urban communities and interweaving of scarce public resources in the creation of partnerships between private and public sector is ever more crucial. It is important that citizens are empowered through involvement in the planning process so that shrinking resources in the future will not be detrimental to sustainable communities. In this sense, a collective effort towards socially sustainable communities can create a blank slate around which new forms of multi-agency engagement and state institution-citizen relationships can be created and maintained (Helms and Atkinson 2007).

The power of local governments and communities to adopt more transparent decision making processes has become increasingly common since the LA 21. Institutional changes occurred so that by February 2002, 6416 local governments in 113 different countries had made either a formal commitment to the principles of LA 21 or were actively undertaking processes to do so. This provides an easier task of rethinking the basis for crime prevention strategies at a local level, by involving local people and exploring broader influencing factors with a common focus across agencies. Most of the changes which have previously occurred have done so in the Western world (Agyeman and Angus 2003); these discrepancies are yet to be addressed in the developing world.

The previous sections have discussed the broad governance requirements for effective sustainable development implementation and highlighted the relationship and implications on crime prevention in sustainable development practice. Good governance is key to ensuring successful multi-agency approaches, to ensure that no aspects of socially sustainable communities are discredited, to ensure that a local focus is maintained with the correct level of expertise and access to resources. Without good governance and devolution of power to local authority organisations, communities will have less 'needs led' and more 'one size fits all' interventions. This is considered an important indicator for ensuring that CPTED planning adopts a needs led approach so that communities are part of an integrated planning process and initiatives are prescriptive and meet the needs of local communities. This indicator was therefore a necessary part of the model for context analysis (See figure 8.2 at the end of this chapter).

The previous paragraphs discussed the notion of sustainability in general. The following sections will report on the indicators specific to socially sustainable communities which are considered important for achieving sustainable communities. Also discussed is the indicators relationship to CPTED and crime prevention in general.

8.4.5: Public Participation

A sustainable community thrives when they have access to meaningful information, opportunities to learn and contribute to the development of the local environment (Innes and Booher 2000).

Governance is a prerequisite for active participation by communities as previously mentioned, yet the rhetoric of sustainable communities requires that public participation is essential (Brownhill and Carpenter 2008); the emphasis being on all community roles, particularly residents themselves who are often left out of the planning process (Raco 2005). Community involvement, partnership and participation are hard to achieve and there are tensions inherent in the notion and practice of community empowerment (See Evans et al 2004). However, if citizens are actively participating in decision making at the community level for all aspects of sustainability, including crime prevention, this will lead to more credible, long term decisions and solutions. Sustainable community planning should therefore be based upon a broad public participation benefiting from the local knowledge and specific needs and aspirations of the community (Bokalders and Block 2010; Dernbach and Bernstein 2003). Crime prevention as discussed earlier rarely focuses on broader social aspects such as the way in which people perceive public spaces, the reliability of public transport etc. and the way in which this impacts perception and behaviour and ultimately fear in the public realm. Crime prevention measures in this respect cannot reflect the needs and desires of local community residents without public participation and are therefore unlikely to acknowledge the diversity of social and psychological drivers which impact on the quality of life. In this respect, crime prevention planning that does not reflect community needs and desires and are not part of an integrated process for sustainable development planning are less likely to have long term sustainable crime reduction effects or an overall increase in the quality of life; hence the need for further exploration of participation through the proposed context analysis model (figure 8.2).

8.4.6: Cohesion

Raco (2005) describes the underpinnings of a sustainable community as “a diverse, vibrant and creative local culture, encouraging pride in the community and ‘cohesion’ within it”. In order for all of these features to contribute to the creation and maintenance of sustainable communities, the citizens within them must all work together, a community wide feeling of mutual responsibility makes this more achievable. Community cohesion is the centrepiece of the UK government policy which was formulated in response to the urban disturbances in northern towns during 2001. Reports identified that lack of community cohesion as the critical factor (Samad, 2010). With regards to CPTED, cohesion is vitally important to ensure the functioning of operational tasks discussed in Chapter six and to sustain the overarching mechanism of territorially. Cohesion of communities ensures a mutual shared responsibility which will have a profound impact on the likelihood of citizens actively engaging in ownership over public space. Cohesion will allow communities to engage in a collective effort to manage the physical and social environment and will likely give individuals more confidence to speak up if deviant behaviour is observed. This however is evidently easier to achieve in some places more than others since racial or cultural tensions at the local level can reduce cohesion, mobilisation and public participation (Dembach Bernstein 2003). Deprivation and marginalisation, in particular, unemployment and low skills, overcrowding and lack of financial well-being make cohesion more difficult, in communities with mixed ethnicities or increased migrant populations this is considered a real problem (Samad, 2010). Native populations do not allow new residents to integrate easily into the community. By reducing levels of conflict, communities will have greater accessibility and cohesion, improving social sustainability and therefore, resilience (Bokalders and Block 2010; Rees and Roseland 1998). It is therefore important to explore such issues at the local level to ensure that these factors do not compromise aims towards a collective community crime prevention effort and to explore potential conflict remedies if these conditions are present.

8.4.7: Self-reliance and mutual community responsibility

Community responsibility is important for CPTED; citizens must feel empowered to take control of the way in which their community operates which in turn should increase resilience. Agenda 21

highlighted the need for more resilient cities and communities as they serve as a holistic method for moving towards more sustainable communities (Zimmermann 2002). Crime prevention and sustainability therefore have a mutual dependence on community responsibility which can be seen through the following steps

- Improved preparedness
- Increase in the quality of life
- Low risk investment (LA21)

Communities which are self-reliant will have a reduced dependency on imports and help from outside, sometimes international organisations. Communities which predominantly rely on outside help will have less internal expertise and skills and therefore reduced investment in their community. Smaller more compact urban patterns will contribute to communities working more cohesively on projects such as recycling, crime prevention and decision making (Muttagi and Hamm 1998).

In 2002 the ICLEI (International Council for Local Environmental Initiatives) decided upon steps for a municipal (regional) led process towards sustainability to centre on a community sustainability vision. The primary aim of this vision was to ensure staff and citizens are agreed upon and working towards the same goal collectively (Quaid, 2002). For this to be possible, places must be built on interdependence with a strong sense of ‘mutual community responsibility’ and are considered an important part of sustainable CPTED planning.

8.4.8: Infrastructure

Analysis of literature on social sustainability revealed the improvement of infrastructure featured as one of the key components. Traditional communities are said to be based around infrastructure (Rees and Roseland 1998). A sustainable community is often defined as somewhere people want to live and work, and therefore the foundations of the place must be appealing with good physical and organisational structures (Brownhill and Carpenter 2008). The physical condition of a community can lead to a declining image, causing people to live and work elsewhere and problems with the environment to become increasingly amplified over time (Alexander 2009).

Within the literature the most prominent infrastructure concerns relate to urban sprawl which blights many Western towns and cities in contemporary society which in turn has also resulted in decreased sustainability. This analysis suggests that investment in infrastructure where needed can rectify urbanised towns and cities and contribute towards the creation of sustainable communities through increased connectivity. Infrastructure is an incredibly important aspect of CPTED since problems existing in the physical and social structure of a community can negatively impact the way in which public space is used and perceived. For example, if a community has inaccessible path ways and dense vehicular traffic, there is an increased likelihood that pedestrians will retract from using this space which will reduce surveillance and capable guardianship and overall cause a decline in sustainability, social cohesion and social control. Physical and social construction of a sprawling urban environment promotes isolation (Srinivasan et al 2003) and from this incites fear of crime and a detachment from neighbours. Therefore, greater connectivity and infrastructure can also make communities appear less dispersed as the distance between work and home is shortened and people feel less secluded, attributing to greater social cohesion (Farr 2008). It can be claimed that infrastructure improvement is the best example of dealing with the environment, the economy and society simultaneously (Dernbach and Bernstein, 2003) combating increasing prices of fuel, greenhouse gas emissions and a number of social factors including mobilisation and cohesion of citizens (Srinivasan et al, 2003); the latter of which is a vital requirement for ensuring that the operational components of the CPTED framework are fulfilled.

8.4.9: Community mobilisation

Improvements in infrastructure can physically and metaphorically increase the mobilisation of citizens. Connectivity increases movement and local authorities' engagement with residents must play a vital role in this (Raco 2005; Parkinson and Roseland 2002). As citizens are empowered and have the infrastructure in place for a more sustainable and cohesive living environment, contribution to the construction and maintenance of sustainable communities are considered to occur more easily through a democratic decision making process (Phillips 2003). If these factors are considered at the pre planning phase of CPTED initiatives, it is more likely that active involvement and capable

guardianship of communities will be increased; thus developing a more sustainable crime reduction effect.

8.4.10: Active, safe and inclusive

Historic planning reveals that communities emerge from clusters of people organised around a common interest, often isolated from each other. Organisation of these clusters strengthens the community structure and therefore become more sustainable (Krebs and Holley 2002). Deteriorating physical environments are well known for their degenerative tendencies as discussed earlier, however with regards to feelings of safety and inclusivity, literature on social sustainability shares a common understanding with crime theories such as Broken Windows (Wilson & Kelling 1982) and Social Disorganisation (Shaw and McKay 1994). A declining physical environment is connected to higher rates of crime which can lead to neighbourhoods feeling less safe for walking or cycling resulting in cases of social isolation. It is argued that if an area is not visually appealing then this will be reflected in how its citizens behave, potentially attracting other undesirable individuals (Raco 2007). This also has a detrimental effect on cohesion and mobilisation of citizens. Methods can be used to rectify this through positive reinforcement concepts as discussed in chapter five and six again reinforcing the dependence upon each other that social sustainability and CPTED share.

The emphasis is on an ‘appropriate’ level of human activity through public space in order to optimise a sense of security (Helms and Atkinson 2007). The aim is to build a greater level of security and trust within communities. It is argued that there exists a relationship between security and sustainable communities in that each is a necessary element in the construction and continuity of the other. Involving citizens in strategies makes them more effective and also empowers communities to foster new types of active citizenship (Raco 2007). This creates and maintains a sustainable community ideology, reducing crime simultaneously; hence its inclusion in the context analysis model.

8.4.11: Well Designed

Design is an important aspect of a socially sustainable community which must continuously meet the needs of the community (Deakin 2003). CPTED planning is based on the idea that design of a

community impacts upon the formulation of social networks and the way in which people operate in the built environment. Sustainable design of the urban form involves constructing and then *operating* the infrastructure (Hancock 2000); again reinforcing the vital social component in CPTED planning with the requirement of operational tasks. Sustainability literature suggests planning simply but comprehensively is the key (Alexander 2009) and can be achieved by going beyond the individual property line e.g. adjusting pavements, green spaces and the like to the particular needs of the community it gives a sense of ownership to the citizens rather than using conventional, rather generic, methods (Alexander 2009). Arranging buildings and grounds so as to give sunlight, space and tolerable outlook to even the smallest and cheapest house in order to make all aspects of the community feel included. Design is naturally an important concept of CPTED, however findings in this section reinforce that crime prevention through design, whilst not always obvious, is a necessary requirement for sustainable communities due to their mutual objectives of design.

8.4.12: Wellbeing

Improving the social, environmental and economic wellbeing of a community is the overall aim for local governments and sustainable communities. Roseland (2012) argues that sustainable community development is about changing communities in “*qualitative ways to a level that is optimal for sustaining our existence on the planet*” (2012:7) which will ultimately improve wellbeing and enable participation, mobilisation and cohesion of communities. Although improving wellbeing could incorporate an infinite number of contributing factors, it is an important overall aim for communities which should be explored at the individual level to find out what are the most important relevant contributing factors. This reinforces the need for community engagement and highlights the propensity for exploration of these features to identify potential barriers to effective CPTED planning.

8.4.13: Quality of life

The quality of life of citizens was highlighted in the literature as a very broad overarching theme in the social sustainability field; quite like that of territoriality within the CPTED framework, although the official definition of CPTED by Timothy Crowe states that CPTED is “*the proper design and*

effective use of the built environment can lead to a reduction in the incidence and fear of crime, and an improvement in the quality of life” (2000:1). This definition reinforces the inherent relationship between CPTED and social sustainability since the indicators identified here all demonstrate shared aims with the CPTED components, with a fundamental overarching aim of improving the quality of life. Nevertheless, this indicator was considered an important part of the model for social context analysis to enable stakeholders to understand the importance and potential benefits of two exclusive concepts working towards the same goals.

8.5: Critiques

Exploring discourse on socially sustainable communities is an inherently complex task. The complexity and multi-dimensional characteristics that shape communities mean that creating a sustainable community is a potentially infinite task and one which will be dependent upon many different factors. Whilst the literature explored in this section demonstrates consistency in the opinions of academics worldwide regarding what creates and maintains a socially sustainable community, there are undoubtedly some criticisms against many of the indicators discussed here.

Local needs led initiatives through community participation is a controversial subject. Fraisse (2011) reveals some limitations of local initiatives that contests their ability to meet the needs of the local community, empower the community through participation in local governance and strengthen social cohesion. Most evident was the difficulties in defining bottom up grassroots approaches and its dependence on local initiatives and community action. Fraisse argues that action is continuously evolving and its future structure and institutional form are undetermined; also that initiatives cannot be reduced to companies, interest groups or social movements and what works for one individual may have opposing effects on another.

In many countries, community participation has become a central principle for policy making. The UK Government has built citizen and stakeholder engagement into policy making processes which often operates through public consultations, focus groups and online forums. Community participation often becomes the rhetoric of governments and private agencies without the reality of processes for

involvement and influence (Peters 1969). There have been instances where ministers and governments have reinforced that their countries rely upon participatory approaches to policy development and community regeneration. All too often, this engagement results in the public being told what needs to be done, carrying out the changes then consulting on it after it has taken place (Peters 1969). Such ‘top down’ decision making is also often reflected in reforms to hospital structures and the transition of services (Gibson, Unpublished). Peters argues that the notion of community participation is ambiguous and this often results in disputes when real participation occurs and is also used as a tactic for gaining political support without a true appreciation of what community participation truly entails.

Community cohesion emerged in government discourse following the civil disturbances across UK towns in 2001 and was adopted by local governments to replace previously failed attempts at multiculturalism. Novy et al (2012) highlights the multi-dimensional complexity of social cohesion and the socio-political conflict that occurs within communities where people live together differently or rather more precisely, have the opportunity to be different, yet able to live together. Novy et al (2014) argue that this paradox is unsolvable and it is an inherent contradiction to human conviviality; more specifically within modern capitalist societies. Dabernack (2014) explored the politics of social cohesion across France, Germany and the UK. Politicians and public intellectuals proclaim social cohesion to be at risk across Western Europe and propose measures for its preservation. Dabernack claims that despite concerns to address dissimilar social problems, community initiatives across different countries propose similarly focused measures of political intervention without addressing direct causes of social fragmentation and disunity.

The discourse of social cohesion in government agendas is also criticised by MacLeavy (2008) and by Donoghue (2013). Donoghue argues that since the inception of Community Cohesion policy in 2001 and the ongoing welfare reforms of the New Labour the policies in place fell short of creating cohesive societies. This was due in part to the perpetuation of different discourses and logics present within British society and in order to be effective, a deeper understanding of cohesion both academically and politically is needed. MacLeavy argues that policy emphasis on community cohesion has diminished the legitimacy of other competing claims to policy resources. MacLeavy believes that

the promotion of community cohesion in areas of social fragmentation, by race for example; is undermining the efforts of interest groups dependent upon government resources to eradicate other dimensions of socio economic disadvantages and injustice.

Whilst the notion of sustainable communities is one that is well received across the world, one must be cautious that the reality of its characteristics are often one of many political constructs. That being said, this research does not necessarily aim to ensure that communities are cohesive, or that communities participate in democratic decision making. There are possibilities that in certain communities, such characteristics may not be positive and may not have the desired sustainable outcomes depending on the underlying social characteristics. This research argues that the indicators of social sustainability form suitable parameters for exploring the context of communities based on a consensus of academic research on what creates and maintains a sustainable community. It also argues that grassroots engagement *before* any planning takes place is vital for understanding the complex characteristics of communities and the impact this may have on crime, fear and the overall quality of life.

8.6: Synthesis

It is clear from this analysis that the features highlighted are very broad and naturally overlap in context. To develop a framework which is truly holistic and can be applied to any context, indicators of social sustainability must remain conceptual so that they remain all-encompassing when explored at the community level. The transition from conceptual to practical therefore relies on community engagement to identify the most important aspects requiring further exploration. What is necessary however is to assess the features highlighted in this analysis to see which are dependent upon each other and which are a consequence/requirement of the other, this will better illustrate the relationships between them.

What is evident from the literature analysis is that **Good Governance** can be achieved by utilising a holistic and locally focused approach to sustainable community development and decision making. This bottom up approach addresses a number of discrepancies that CPTED has been criticised for in

the past (See Appleyard 1979; Kelly et al 2005; Grohe 2011). The sustainable communities' rhetoric suggests that different levels of government, at different spatial scales who co-operate through joined-up strategies and collaborative implementation will provide a more holistic strategy of governance. This enables advancement from the traditional top-down style of organisation.

The physical design of the community is inherently connected to the formation of social links as a poor physical condition can be shown to increase crime opportunities and criminal motivation. If good governance is achieved, communities are said to have input into the **infrastructure** developments that are needed within their community. Infrastructure within this analysis revealed three components: social, physical and civic. Civic infrastructure predominantly relates back to governance and the importance of ensuring a democratic decision making process. Social and physical infrastructure were predominantly related to design.

Design requirements are context specific and entirely dependent upon the nature and intended function of the environment in question. Highlighted in this analysis as the most relevant to the social sustainability of a community were: **Maintenance, Tenure, Open Green Space and Safe and Inclusive**. Naturally, CPTED has inherent links with all design components however further exploration with community residents is sought to identify what aspects of these indicators are relevant. By addressing design as a component of socially sustainable communities, both sustainability literature and CPTED have a common interest in that design will influence the social processes of communities and serve to increase the level of community cohesion. By having a greater feeling of social support, this will enhance both actual and perceived safety.

The above indicators were predominantly sub components of both physical and social infrastructures which would be required for all aspects of sustainability including environmental and economic sustainability. Social sustainability on the other hand has a more direct focus on **cohesion** as an overarching requirement. Cohesion in this analysis was interpreted as a consequence of correct design and infrastructure however it was also identified as a requirement for other indicators such as public participation, community self-reliance and mobilisation.

Community Self Reliance is equally dependent on community cohesion in that there must be a network of active citizens with a diversity of skills and knowledge to build, strengthen and maintain their community without relying on outside organisations. Not only does this give communities the power to actively engage in democratic decision making, manage and control their environment but it has the propensity to increase ownership due to the increased immersion in one's place of work and home. In order for communities to **participate** in decision making processes as well as actively engage and take ownership of the environment, a level of cohesion is required to ensure that community networks establish a shared vision and collective responsibility

Metaphoric **community mobilisation** is dependent on self-reliance and public participation in that being self-reliant and participating in community based initiatives mobilises and empowers citizens to take active control and increase motivation to foster positive social and physical change. Physical community mobilisation is primarily dependent on infrastructure through increased connectivity to and from neighbouring communities and larger towns and cities. However, a level of cohesion and familiarity is also required to give individuals the confidence to use the public realm.

In order for a community to be self-reliant, it also must have a degree of awareness and information sharing. **Awareness of problems** is vitally important if the correct level of control and self-sufficiency is to be obtained. **Information sharing** between community members and local government is necessary at all costs to ensure that the awareness of problems is a collective awareness and the correct information is obtained so that prescriptive interventions can be implemented.

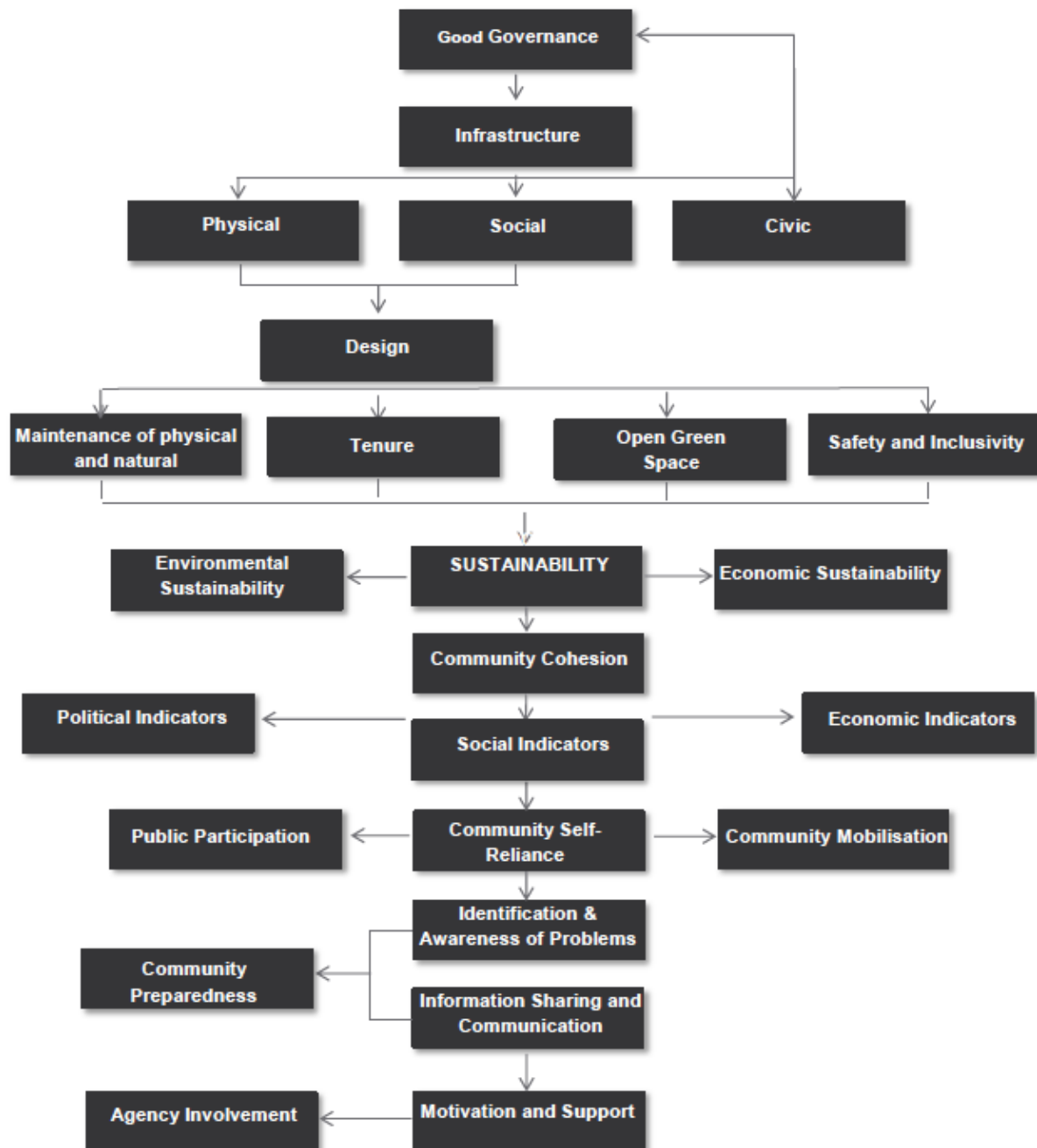
When communities have a collective awareness and share information adequately, they will become more prepared. If communities have an **awareness of problems** and have information and knowledge of historical occurrences such as natural disasters or political conflicts, they are likely to be more prepared for the future. Preparation allows communities take more responsibility and the necessary preventative steps to reduce the likelihood of future occurrences and to learn from the past.

In order to make positive preventative changes, a level of **motivation and support** from local and central government agencies is vital to ensure that communities have the necessary resources,

expertise and power to drive change. Agency involvement in this sense is vital to all modes of prevention and sustainability which ultimately leads back to governance.

The model in figure 8.2 was proposed as a basis for analysing the social context of a community. It is proposed that this model remains entirely conceptual to ensure a holistic approach to exploring social context within a community. It is anticipated that exploration of these indicators with groups of community representatives will identify measurable features of the physical and social environment which impact on people's perception of crime, fear, and overall quality of life.

Figure 8.2: Model for context evaluation



8.7: Conclusion

It is clear from the conceptual indicators highlighted here and their context discussed above that the sustainability of CPTED initiatives are somewhat dependent upon a socially sustainable community and the way in which communities operate. CPTED is dependent on the ownership of communal

spaces and the territorial behaviour of law abiding citizens, yet if a community is socially unsustainable where none of the above conditions exist, there is an increased likelihood that any positive crime reduction effects will be immediate and short term with no longevity since they will be top down and generic, with low public engagement and a lack of community responsibility.

Vice versa, CPTED has inherent links with many properties of socially sustainable communities, particularly with regards to design. Whilst there are a few examples of design specifications highlighted in the literature, the CPTED framework provides the theoretical tools to help sustainability practitioners consider design more holistically whilst also providing the necessary design requirements for a safe, inclusive society.

The proposed model is not holistic and could benefit from further analysis of sustainability literature beyond that feasible in the time frame of this study. What is important and worthy of note and concern, is the position of social context in CPTED planning and that community context is an important factor in the basis for crime prevention strategies, beyond what is currently considered. Also important is that the dependency of the indicators was not incorporated into the analysis and therefore cannot confirm that all of the indicators are required to achieve a truly sustainable community. Whilst further analysis would be required to explore this issue, interpretation of the literature suggests that this may be the case and therefore questions the reality of creating a truly sustainable social environment. What is argued however is that consideration of each individual indicator is required in CPTED planning to help identify potential barriers to effective CPTED intervention, the same as each component of CPTED is required to increase territorial behaviour and guardianship. It is therefore appreciated that this is a preliminary step towards a (hopefully) ongoing debate and further development of the CPTED/sustainability field.

This model is not intended to be practical and purposefully remains conceptual so it can be used as a tool for exploration and guidance in public engagement and to provide a basis for bottom up, context specific CPTED planning.

8.8: Summary of Part C

Part C of this thesis has successfully explored the concept of social sustainability and underlined its importance in crime prevention planning in the built environment. The literature analysis successfully highlighted indicators of a socially sustainable community and recognised shared aims and objectives with CPTED. The research has proposed a model for evaluating social context by engagement with local communities in which context specific features can be drawn for localised analysis. From this, relevant contextual information on how communities use and perceive the built environment and the way in which the environment impacts the quality of life, can help professionals make informed decisions for crime prevention which are both needs led and community focused.

Part D of this thesis will lead on to empirically test both the transferability of the proposed CPTED framework and discuss the impact of context information on professional's interpretation and application of the CPTED framework. The next chapter will introduce the study area from which this empirical analysis was conducted.

CHAPTER 9: Review of Study Area

So far, this PhD has examined the CPTED knowledgebase and identified serious issues with regards to the communication of CPTED knowledge and engagement between stakeholders. Also of great importance was the lack of social context analysis in CPTED planning. Part B of the research successfully explored the CPTED knowledgebase to identify the source of communication conflict in which significant language and terminological discrepancies were found, in both academia and professional practice. A new, updated CPTED framework was proposed which demonstrated a holistic catchment of CPTED knowledge, theoretically structured to facilitate deeper conceptual understanding and transferability. The proposed framework advanced previous frameworks in the recognition and emphasis of operational and preparatory tasks in the form of physical and social components, which are required for successful and sustainable CPTED intervention. Whilst this was important, integrated conceptual guidance on the operational components of the framework were still lacking and processes for social context analysis were not incorporated. In recognising the importance of socially sustainable communities in the longevity and impact of CPTED interventions, the concept of social sustainability provided conceptual indicators for localised context analysis. This generated a conceptual model (figure 8.2) to explore in the field and help understand both physical and social environmental characteristics that may impact on crime, fear and the overall quality of life.

9.1: Study location

Vital for this PhD research was an empirical study to test the transferability and impact of both the CPTED framework and the social context model which would increase the integrity of both, as well as the PhD findings overall. The main location chosen for this empirical analysis was Trinidad and Tobago in collaboration with Trinidad's Town and Country Planning Division (TCPD) due to a number of factors. First, there are no situational crime prevention methods incorporated within central or local government planning guidelines or legislation in Trinidad. The region therefore provides a blank canvas from which to explore CPTED from an unbiased perspective. Trinidad is also a country

with exceptionally high crime rates (OSAC 2014). Its geographical juxtaposition with Central and South America means that the west coast of the island acts as a transatlantic shipping point for narcotics and weapons to the western world (US Department of State 2006). The government has recognised the deteriorating crime problems within the country has had an increase of 400% in murder in the past decade (Townsend 2010). Personal Communication with the Director of the Citizen Security Programme (Ministry of National Security) on 22nd June 2014 suggests that the Trinidad Government are now beginning to appreciate the importance of contemporary crime prevention measures, and CPTED projects and training are beginning to be tendered for consultancy from outside agencies. Last, results from chapter four and seven indicated that whilst CPTED was beginning to gain international recognition, the focus remains on countries such as the UK, USA and Australia. Conducting a CPTED field study in this region of the world with potentially different challenges and characteristics therefore adds another contribution to new knowledge in the field.

Whilst Trinidad has a relatively high GDP, its status as a developing country is still being debated due to blighted poverty, inequality, corruption and the ongoing battle against, drugs, prostitution and crime (United Nations 2013). The World Economic Situation and Prospects Report 2013 (United Nations 2013) confirms that Trinidad continues to be classed as a developing country, although it is considered to have high income in aggregate and is the most economically developed nation in the Caribbean. Crime and Law and Order feature as one of the seven strategic pillars set out in the Medium Term Policy Framework from which the country hopes to achieve developed nation status by 2020 (Government of the Republic of Trinidad and Tobago 2011).

Whilst crime prevention is coming to the forefront of government agendas, there is still no formally integrated policy, guidance or recommendation to incorporate crime prevention into the planning and design of new or existing environments. There is also no evidence that crime prevention has been considered in the planning and design of any of Trinidad's communities. This puts the Town and Country Planning Division in a vital position to drive change as well as providing a blank canvas for knowledge transfer since few practitioners in this region have knowledge or experience of CPTED or Situational Crime Prevention methods.

A review of the study area briefly explored the history and development of Trinidad and Tobago and how this has impacted upon contemporary Trinidadian society with a particular focus on conflict, crime and fear. It will also make reference to various socio-demographic and socio-economic indicators and the impact they have on its development. A brief introduction to the planning system will demonstrate the institutional and political context in which CPTED is to be embedded.

9.2: Historical Development of the Caribbean and Trinidad

The Caribbean consists of a large ‘jigsaw’ of islands that politically and economically have changed, reshaped and grown independently over the years. Unfortunately, the development of the Caribbean witnessed entrenched violence against the indigenous peoples of the region; the predominant groups being the Caribs and the Arawak’s/Taino’s. From the beginning of the Spanish invasion in the 1500’s the indigenous Caribbean population declined from 8 million to 22,000 (2,763 in Trinidad). Carew (1996) argues that these indigenes were exterminated in an “*unprovoked violent destruction of the environment that had sustained people for thousands of years*” and that it was this that led to the contemporary Caribbean becoming a “*settler, plantation and slave society*” (1996:73) in the post Columbian era. The immigrant and slave population of post Columbian Trinidad suffered such extreme de-culturalisation that the population became a melting pot of suppressed cultural and societal norms with few if any sustained native traditions (Munasinghe 1997).

Following the extermination of most of the indigenes, a highly significant component of the population structure was added with the importation of slaves, originating mainly from West Africa. These enslaved Africans were subject to a particularly violent system of coerced labour and social control (Brereton 2010). First colonised by the Spanish, Trinidad later came under British control in 1802 and remained so until Independence in 1962. Slavery in Trinidad was dominated by the sugar industry in which the majority of early slaves, were of African descent (Ramesar 1976); the sugar industry was hugely impacted by the emancipation of slaves in 1834.

A further significant component was added, as the perceived need to ‘recruit’ a replacement labour force resulted in the importation of approximately 117,000 contract labourers from Calcutta, India

from 1845-1917 to work primarily on the thriving cocoa plantations (Riggio 1998). Population growth was also impacted by the emancipation of slaves which more than tripled in size from 1851-1901 and increased by a further 22% during 1901-1911 (Ramesar 1976). Hoetink (1967) described Trinidad following the importation of two dominant races as a “segmented” society; one which “*consists of at least two groups of different race and culture, each having its own social structure and society as a whole being governed by just one of the segments*” (1967:2). It is noted that conflict and violence was always a prominent characteristic in the cultural development of the region that would perhaps have a substantial negative impact on the social norms, values and overall sustainability of the country in later years.

Whilst society was largely segregated following the influx of Indians, throughout its history, Trinidad has maintained a Creole cultural core in the form of the master- slave, black-white relationship of slavery (Ramesar 1976). Sir Louis De Verteuille, a very well-known figure of the French Creoles highlighted Creole culture by referring to their habits and civilisation as something ‘*he regretted that new coming Indians were not being assimilated*’ (1884:350). Segregation was also largely emphasised by the Creole Patois which was reported to be the language of the Trinidadian born masses at the end of the 19th century (Johnson 1972) and created a further divide between patois and non-patois speaking populations, therefore segregating the Indians even further due to language affiliation of superior classes. Indian immigrants who completed their indentureship post emancipation also went on to establish cocoa estates and the Indian community prospered, gradually making up the largest ethnic group in Trinidad (Government of The Republic of Trinidad and Tobago 2011).

9.2.1: Conflict and Violence

Up until the 1870’s, the population of Indian origin had remained relatively passive and caused no conflict during their early settlement. They became more assertive following opportunities for land acquisition during indentureship that enabled them to settle and purchase homes and occupations outside the estates. This movement caused them to retract from the typical social position of ‘Indentured and Immigrant’ to be more defiant and violent in deteriorating industrial conditions (Ramesar 1976). Violence became an endemic issue in Trinidad communities. In 1880, 60% of all

murder in Trinidad was committed by Indians whilst constituting only 30% of the population (Brereton 2010). Their upward economic mobility and the prospect of political involvement in Trinidad following emancipation caused some apprehension amongst the Creole population. Tension between Indian immigrants and both the British and the black population began to rise and was also fuelled by the economic depression of the 1880s-1890s which led to increased job competition and low wages (Brereton 2010).

Outbreaks of violence began to emerge such as the Hosay massacre in 1884 in which British colonial authorities fired on unarmed participants of the annual Hosay procession; a religious ceremony conducted by Indians each year in San Fernando and Princes Town. This massacre had a death toll estimated at 31 dead and over 200 injured (Anthony 2001). The Indian population were known for sustaining their culture and were very influential to the rest of the Trinidad population by maintaining alternative religious and cultural systems; their Hindu constructs restricted social intercourse between fellow Hindus of different castes and implicitly discouraged social mixing and inter-marriage with non-Indians (Ramesar 1976). It is likely that such self-segregation was the beginning of cultural, racial, religious and subsequently political conflict and division in future years (Clarke 1971).

Trotman (1986) within reference to the segregation between ethnic minorities highlighted that 19th and 20th century Trinidad was a violent country with a *“high incidence of crimes against the person and other forms of violence”* (Townsend 2010). Trotman argued that the historical development of the region and the nature of colonial society created *“a pattern of violence which was both impulsive and implosive: that is, it manifested itself as the violent actions of irrational men [and women] wreaking havoc on themselves rather than on the source of their frustrations and oppression”* (1986:134). Trotman (1986) argued that colonialism and its inherent racism created a climate which violence could physically and psychologically thrive by making possible atrocious living conditions and low quality of life which in turn *“promoted a milieu in which violence and aggression were salient”* (1986:134-39).

9.2.2: Repression and Resistance

Repression and resistance soon became dominant in the mind set of immigrant Trinidad populations. At just over 5000km², it became a nation which was said to have had “*eight separate languages by 1812, a constellation of religions as well as a kaleidoscope of cultures*” (Riggio 1998:43). A dominant notion was held throughout, which was a shared antagonism towards the British rule (Riggio 1998). Following the decline of the sugar and cocoa industry and oil becoming a capital intensive industry the labour movement assumed importance following WW1 (Meditz & Hanratty 1987). Captain Andrew Arthur Cipriani was a white man who was angered by the West Indian Regiment not being allowed to fight for the British Empire. He gave the masses national pride, taught them to oppose colonialism and revitalised the Trinidad’s Working Men’s Association; renaming it the Trinidad Labour Party in 1934. Because he was white, Cipriani could overcome the racial dichotomy and his work efforts opposed racial discrimination; he fought for universal suffrage and constitutional reform for workers (Meditz & Hanratty 1987). Following a worldwide depression in the 1930’s and deteriorating living standards, workers moved away from Cipriani’s policies and the labour movement became radicalised, which resulted in numerous strikes and riots (see Brereton & Yelvington 1999).

Resistance against the colonial rule originated centuries before and was a key factor in the emergence of specific cultural events such as Carnival. Carnival originated in the late 18th century when French plantation owners organised masquerade balls of which slaves could not attend. They then formed their own celebration called “Canboulay” which later played an important role in the development of Trinidad’s music industry. The resistance of slaves in the formation of Carnival further exacerbated the social and cultural gulf between the white elites and the masses. Various writers (Elder 1998; Liverpool 1998; and Lovelace 1998) imply that emancipated Africans lived in a society in which masking and disguise was prohibited; where culture was repressed and emancipated populations were dehumanised. This repression pre-empted the development of their own culture-affirming “European resisting celebrations” such as carnival, calypso music, steel drums and so on (Riggio 1998).

In reference to the Emancipation Act 1833 which abolished slavery throughout the British Empire, Earl Lovelace (2013) claims that the Act “*did not produce the beginning of the new and free society*

that we might have envisioned” and that “it was, if anything, an expression of bad faith, setting people at liberty to fend for themselves without any reparation after years of having their labour exploited” (2013:69). Following emancipation, the British repressed immigrant’s religious and cultural expressions; they criminalised any involvement with religion or culture of the black working class (Sued-Badillo 1992; Riggio 1998). Repression of religious and cultural traditions created a new Caribbean culture through resistance and the struggle to retain and carry on culture in the efforts of the masses to declare themselves against a dehumanising system. Lovelace (2013) argues that *“the struggle for a different vision of what it is to be human became, in effect, also the political and economic struggle”* (2013:70). The stick fighting, chanting, pan men, calypsonians, mass-men, prostitutes, the jamettes; their fight for freedom constituted rebellion and they were tagged *“not as freedom fighters, but as delinquents”* (Lovelace 2013:70). Contemporary Trinidad culture is deeply rooted in the resistance of lower class individuals such as the steel band, calypso music and carnival.

It is believed that resistance against the British rule had a profound impact on contemporary culture in Trinidad. Lovelace (2013) claims that *“youth, pride, depressed conditions, unemployment, the need for self-affirmation and the confusion surrounding the cultural struggle made it easy for rebellion and delinquency to be twinned in the public mind and for ‘decent people’ (upper class) to feel the need to keep their distance from any of its expressions”* (2013:70). It wasn’t until Dr Eric Williams was appointed as the first Prime Minister for Trinidad and Tobago in 1961, that anti-colonial rhetoric began to challenge criminalisation which was faced by the colonised society. Criminalisation was challenged by fighting against colonial exploitation and seeking to educate and mobilise people in an effort to create a collective identity during independence. Whilst William’s intentions were good, he also came from an upper class back ground and his actions failed to see the people differently to his predecessors (Ramesar 1976). His Independence Day speech which focused on Discipline, Production and Tolerance revisited the traditions of plantation values and reminded the people that there would be no revolution or overturning of society any time soon. He clearly did not set out to challenge the colonial middle class, and institutionalised racism remained.

9.2.3: Political Conflict post emancipation

When Trinidad gained independence from the British rule in 1962, a Westminster model of government was adopted which provided free, fair, open and transparent elections for parliamentary democracy. Since independence, the Government has operated under a multi-party system typically divided by the People's National Movement (PNM) of largely Afro-Trinidadian supporters, and the United National Congress with a majority of Indo-Trinidadian support. A political system which is racially and religiously divided has been the source of conflict in more recent years. Premdas & Ragoonath (1998) argue that Trinidadian society is rife with inter-ethnic suspicion and communal identity which is "*interwoven and institutionalised in organised party politics*" (1998:31); the result of which means that there is an inevitable struggle for government control which carries substantive implications for society. Politics in Trinidad developed as a response to the underlying ethnic demarcations with the Peoples National Movement being predominantly African led and the United National Congress being Indian led. Premdas & Ragoonath (1998) confirm that since independence, the state has been ethnically bifurcated and due to the historical circumstances of Trinidad's past and the sustained ethnic divisions, Africans now dominate the polity and Indians control the economy (Milne 1975; Premdas 1993). Elections have now become a field of contesting identities caught in 'a threat of ethnic domination' (Premdas & Regoonath 1998).

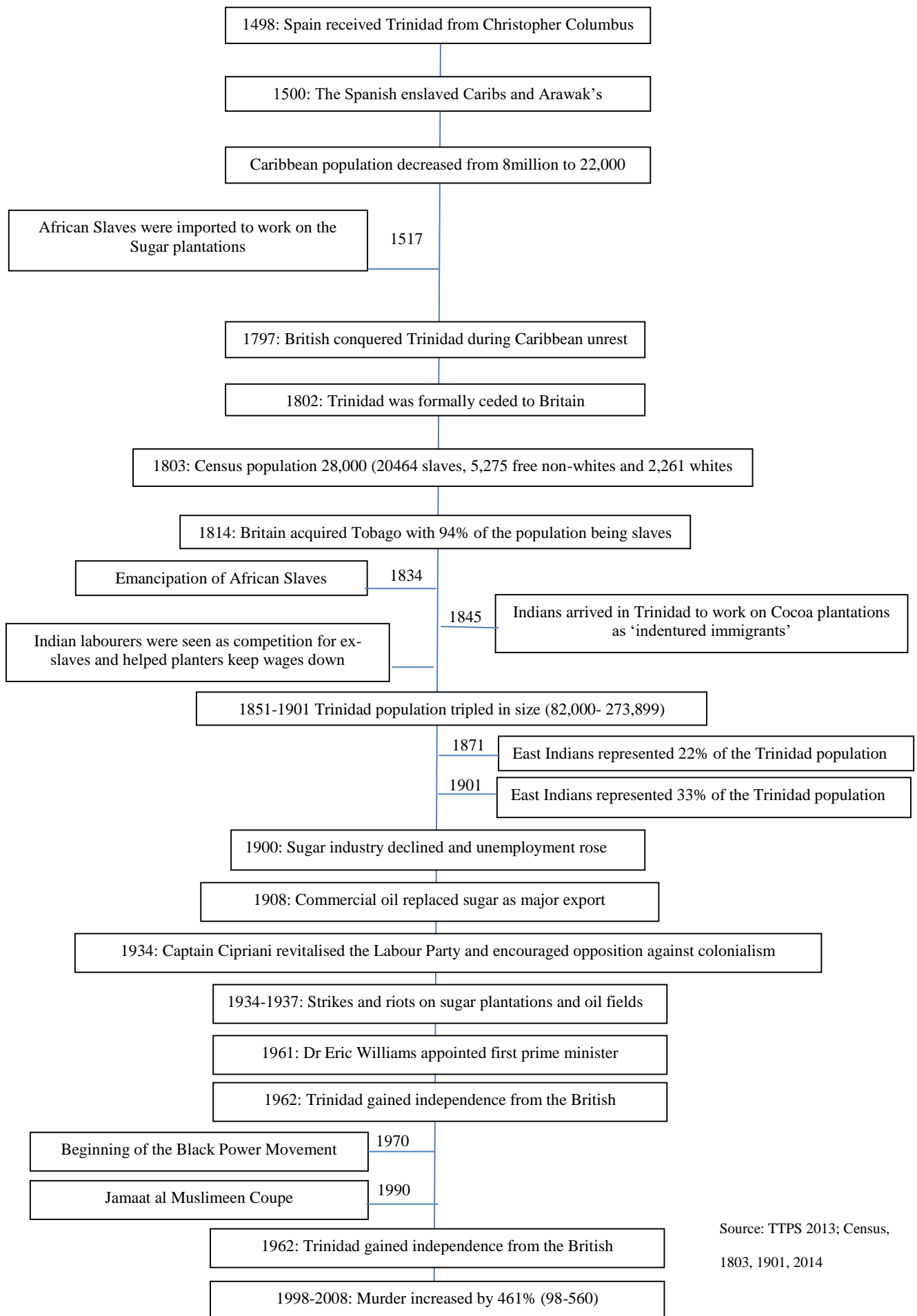
Racial and political tensions have been the source of many conflicts since emancipation. The 'Black Power' movement in the 1960s and 70s brought to light the repression and resistance of the former years by moving resistance from the cultural sphere into the political. The movement presented a '*serious challenge to the dominant cultural ideology*' (Pasley 2001) which derived largely from the European model of the colonial era. A number of events occurred in the 1950s-60s contributing to the growth of The Black Power movement such as the passing of legislation restricting people's freedom to protest. International events such as the Cuban revolution in 1959, the Civil Rights movement in the USA, and the African and Asian Independence struggles all had a substantial impact on the views and motivations of the Trinidad population. Against the background of disillusionment with the PNM and marches in solidarity with students on trial in Canada (see Meditz & Hanratty 1987), the Black

Power demonstrations began in February 1970 and subsequently came close to overthrowing the government. The most noticeable demand of the Black Power slogan was against racial discrimination in society, in particular with regard to employment. The movement was however soon repressed due to imprisonment of leaders and the government's imposition of a state of emergency on 21st April 1970 (Pasley 2001).

Further violence and conflict arose in the 1990s when Yasin Abu Bakr the leader of the Jamaat al Muslimeen group attempted a coup d'état. Jamaat al Muslimeen were made up of 42 insurgents who stormed The Red House, the seat of parliament and held President ANR Robinson and most of his cabinet hostage whilst offices of Trinidad and Tobago TV (TTT) and the Trinidad Broadcasting Company were attacked; they announced that the government had been overthrown. After 6 days of negotiations and a state of emergency imposed, the Muslimeen surrendered and were taken into custody. Despite charges of murder, Abu Bakr has evaded prison due to unreliable evidence. The Jamaat al Muslimeen has been linked to many kidnappings and criminal activities in the drug trade and Bakr has expressed radical views against Indo-Trinidadians because "*Indians own all the land and business*" (Interview with Trinidad and Tobago Guardian, 11th July 2011) which expresses the partially concealed racism which is endemic in Trinidad society. The coupe which took place on 27th July 1990 continues to weigh heavy on the Trinidadian society and the subsequent legal proceedings were "*beset by scandal and political intrigue*" (Trinidad and Tobago Guardian, 11th July 2011). The militant politics of Jamaat al Muslimeen provide a critical insight into the nature of racial and religious conflict and the underlying social and political currents in Trinidad and the wider Caribbean state. Bitter rivalries have remained between Afro-Trinidadian and East Indian politics and society has engendered a sense of resentment, particularly with regards to the socio-economic inequality between races which emerged from the colonial era.

A timeline shown in Figure 9.1 will help indicate the chronological order of events discussed in the previous sections.

Figure 9.1: History of Trinidad



Source: TTPS 2013; Census,
1803, 1901, 2014

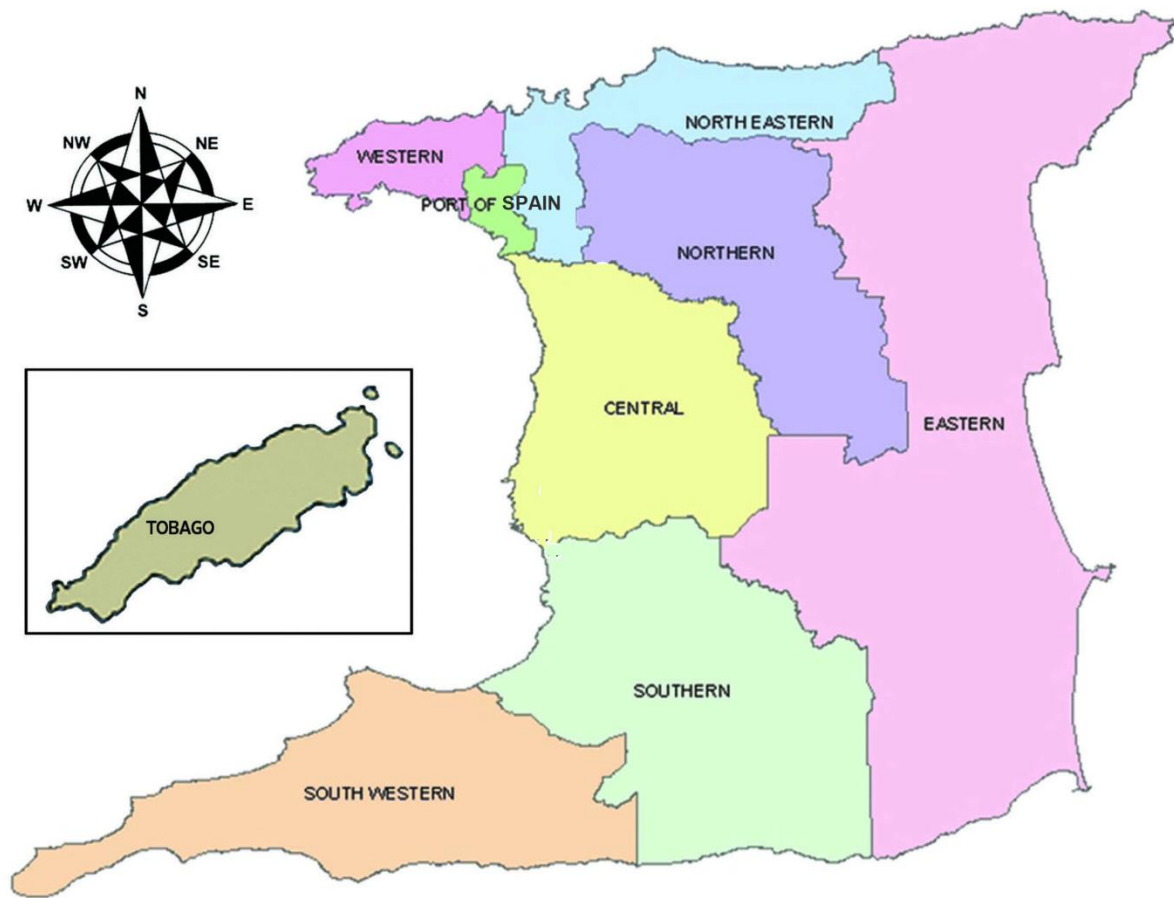
9.2.4: Contemporary Trinidad Police Service

The success of Abu Bakr and his evasion of criminal apprehension is indicative of the state of corruption in the police force and the wider government. According to Gomes (2007) “*all the police forces in the Caribbean suffer from the ills of unreformed police structures*” (2007:2). This is with regards to their failure to conduct due processes; using excessive force, brutality and torture; extreme corruption, bias and discrimination. It has been suggested that such a heavy hand is perpetuated and fostered from colonial ruling regimes by retaining force and suppression (Daruwala & Doube 2005).

The Trinidad and Tobago police service (TTPS) has over 6500 officers and is organised across 9 divisions (See Plate 9.1) and 18 branches, squads and units. The police commission is appointed by the President following consultation and approval by the Prime Minister and Leader of the Opposition. Concerning internal and external accountability, the current police force structure offers a political loophole for corruption. The Police Complaints Authority is responsible for external accountability, members of which are appointed by the President, as established by statute in 1993. The same Police Complaints Act applies to the Complaints Division within the police force who is responsible for internal accountability; members of which are appointed by the Police Commissioner. All complaints received within the Complaints Division are to be investigated on behalf of the Police Complaints Authority, the result of which can only be in the form of recommendations to the Police Commissioner who is not obliged to take the recommendations on board (Gomes 2007).

Plate 9.1: TTPS Police Divisions and study area location

TTPS Police Division Map



Source: Adapted from Guardian.TT

There have been numerous recommendations for the reform of the Police Service and substantial sums of money wasted on international consultation and recruitment training and technological advances however the problems within the force remain (Gomes, 2007). Up until 2008 the governing authority for TTPS was rather dysfunctional. The Ministry of National Security was solely responsible for policy and budgetary oversight whilst the Police Service Commission consisting of five members, had the authority to make personnel decisions, hiring and promotion, discipline and dismissal (Mastrofski & Lum, 2008). There was no entity independent of the force with the power to monitor performance or the accomplishment of goals set by the Ministry; all performance statistics derived from the Ministry or the police service itself which were conveniently held accountable for its

success. Whilst the police were closely watched through the external Police Complaints Authority, Mastrofski & Lum (2008) believe that they “*were not well governed*” (2008:21).

Public perception of the Trinidad and Tobago Police Service is less than satisfactory. The first and currently only 2008 Crime Victimization Survey for Trinidad and Tobago (Holder 2008) revealed the context of public perceptions of the police and law enforcement. The police service was consistently perceived in a very poor light and were seen as ineffective, inefficient and discourteous, and a reason for shame within the country. Table 9.1 shows public perception of the police from the Crime Victimization Survey.

Table 9.1: Public perception of police

Context	Agree	Disagree
Police are good at preventing crime	41%	45%
Police work well with residents	26%	49%
Police respond promptly to calls	25%	56%

Source: Crime Victimization Survey 2008

The analysis summarised that unless this perception could be changed, crime prevention interventions “*are likely to be ineffectual*” (Holder 2008:5). The survey also revealed a sense of hopelessness and lack of care among youths due to a perceived lack of authority concern. Such negative perceptions by youths are likely to have a consequential impact on their attitude and behaviour in society with an increased risk of turning to criminality. Respondents of the survey reported a substantial lack of confidence in the police which has potential to impact upon the likelihood of reporting an incident. Statistics from the survey (Holder 2008) confirmed that over half of violent incidents went un-reported which means that violence in Trinidad is grossly underestimated.

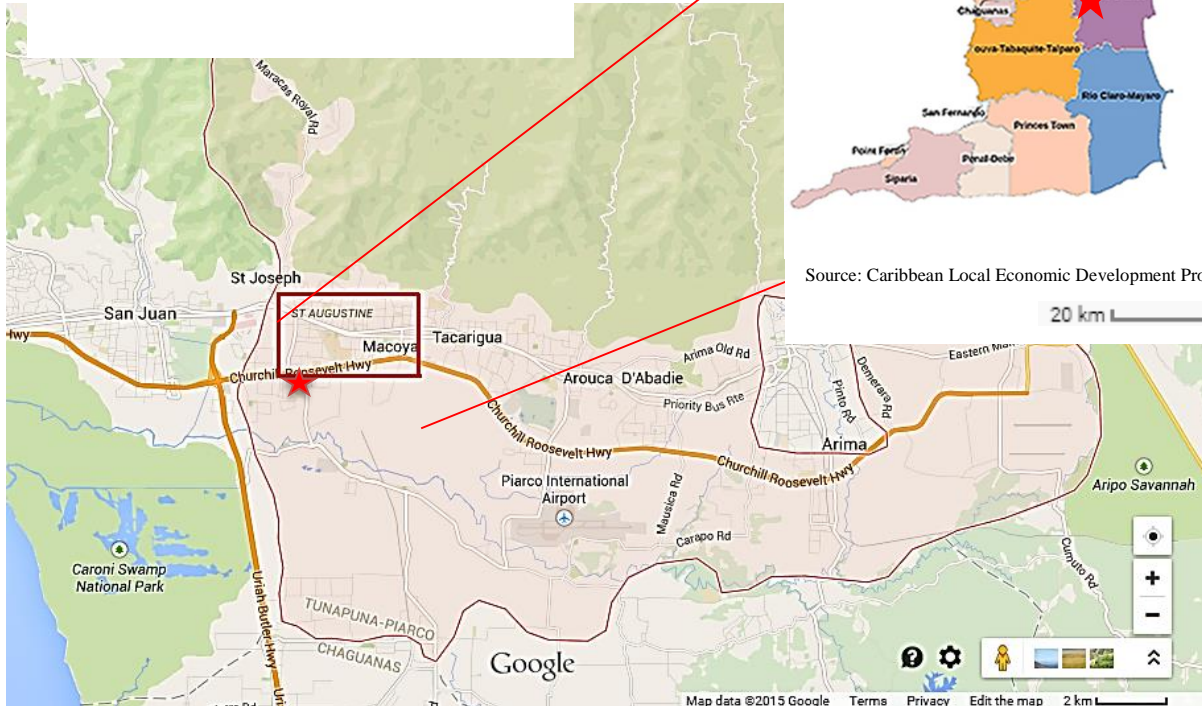
The area in which this field study is situated is within the municipality of Tunapuna/Piarco (see Plate 9.2). Within that municipality, the districts of St Augustine, Tunapuna, Curepe and El Dorado are the main foci and are all within an approximate three-mile radius (see Plate 9.3).

Plate 9.2: Country map



Source: Caribbean Local Economic Development Project (CARILED)

Plate 9.3: Study area boundary



It is significant that less than one mile from this study area is a small village called Bangladesh (see red star on Plate 9.3) which has a victimisation index for assault and threat more than double the average for all of the communities in which the survey was conducted (Holder 2008). Such close proximity to the Bangladesh village makes the study area particularly relevant since there is expected to be implications on fear and risk to crime.

9.3: Some Contemporary Facts

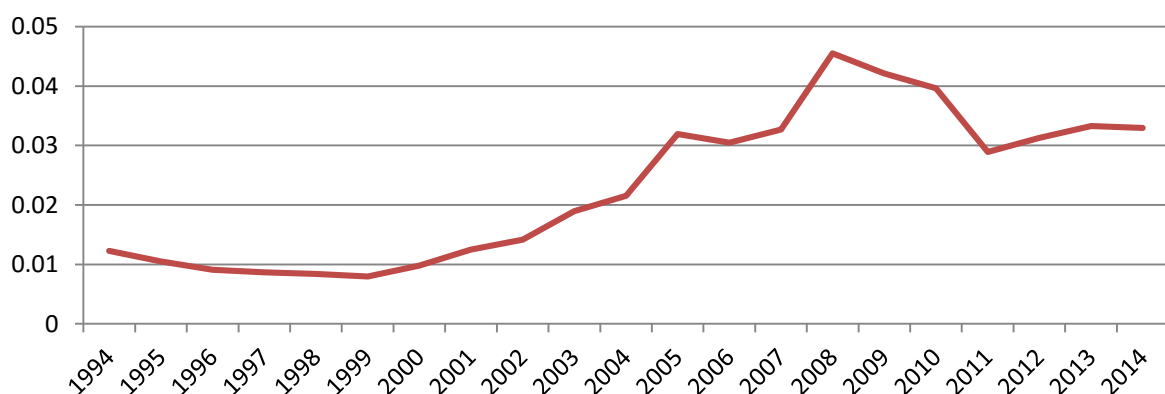
It is important to now bring this review up to date and consider the current status of Trinidad and its implications on crime and fear within the area. Of importance is the current crime situation and the socio demographic/socio economic conditions which may impact on crime and crime prevention efforts which are enforced in this region. This will ensure a thorough understanding of the current

situation of crime and crime risk in Trinidad and the wider socio political context from which CPTED is to be considered. Also important is a full appreciation of the planning process in Trinidad so to understand the bureaucratic and institutional context from which CPTED is to be applied.

9.3.1: Crime and Road Safety

The US department of State currently considers crime in Trinidad to be rated at a critical level and a principal threat to visitors (OSAC 2014). Violent crime, particularly murder, has increased from 354 in 2011 to 405 in 2013 with a population of just 1.3 million (See Plate 9.6)

Plate 9.6: Trinidad murder rate per 10,000 population



In 2011 the government implemented a State of Emergency due to the emerging threats of violence; a curfew in particular areas was also imposed. During this time, murder decreased, however when the curfew was lifted crime began to rise again. The Guardian newspaper following the end of the curfew reported

“The curfew is over...but the state of emergency remains” (Lord 2011)

The state of emergency remained so that the levels of criminality did not increase again however it is clear from Graph 9.1 that there was a slight increase after the curfew was lifted in 2011. Whilst this rise would be expected as a result of changes in human behaviour following the realisation that control has weakened, crime continued to rise at that point which suggested that the curfew had little impact and there was a need for a deeper and more integrated form of crime prevention measures required for long term sustainable crime reduction effects.

Violent crime in Trinidad is attributed to the influence of gangs, illegal narcotics and weapons. The Trinidad and Tobago 2014 Crime and Safety report (OSAC 2014) estimated that there are currently approximately 100 different gangs existing in Trinidad which have been linked to crimes relating to “*weapon smuggling, fraud and other organised activities*” (2014:1). Most crimes are however considered to be opportunistic, mainly pickpocketing, assault, theft/robbery and murder. A snapshot of minor crimes in 2013 (Freedom of Information Request) reveals an extremely low detection rate as shown in table 9.2

Table 9.2: Opportunistic minor crime: Source TTPS (2013)

Crime	Rate of crime per 100 population	Detection rate
Fraud	0.002	30%
Larceny	0.21	6%
Larceny Dwelling	0.02	9%
Praedial Larceny	0.01	15%
Malicious wounding	0.03	29%

Road Safety is also particularly problematic in this country. There is a high rate of road traffic accidents including fatalities (TTPS 2013) and public transportation is both unreliable and dangerous. The Ministry of Works and Transport have recently reported the high risk of violent attack on passengers of public transport after identifying the number of unlicensed private hire taxis and an increasing amount of taxi drivers with criminal records of violent offences (MOWT 2014). According to crime statistics from 2001-2013 (Freedom of Information Request), public transport features as one of the highest locations for murder.

Analysis of crime rates for 2013 shows that the Northern police division has a fairly average rate of acquisitive crime (economic gain) at 79% (see table 9.3).

Table 9.3: Rate of acquisitive crime by total crime in police division: Source TTPS (2013)

Division	Acquisitive crime as a rate of total division crime
POS	79%
Southern	79%
Western	80%
Northern	79%
Central	82%
South Western	61%
Eastern	66%
North Eastern	82%
Tobago	79%

The Northern Police division is the division located in the municipality of Tunapuna/Piarco. Whilst this may seem small, detection rates of acquisitive crime are particularly low at 9% (see table 9.4) and the Northern division experiences 19% of all acquisitive crime nationally. This Division also features the lowest detection rate at just 15% of all serious crime, the 5th lowest detection rate nationally (See table 9.5)

Table 9.4: Acquisitive crime detection rates by police division: Source TTPS (2013)

Division	Acquisitive crime detection rate
POS	3%
Southern	18%
Western	7%
Northern	9%
Central	8%
South Western	27%
Eastern	35%
North Eastern	5%
Tobago	12%

Table 9.5: Detection rate of all serious crime by police division: Source TTPS (2013)

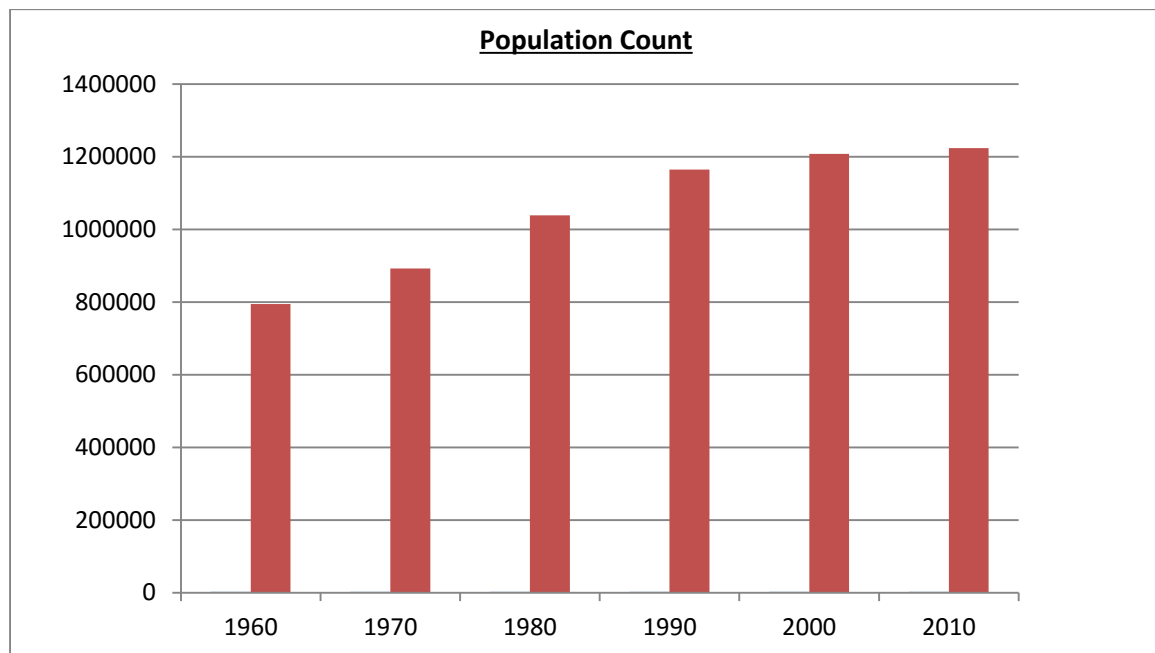
Divisions	Rate of Serious Crime per 100 population	Detection Rate
POS	2.502	6%
Southern	0.761	24%
Western	1.074	11%
Northern	0.996	16%
Central	0.817	13%
South Western	0.599	45%
Eastern	0.686	48%
North Eastern	1.042	7%
Tobago	1.962	20%

It is clear from these statistics that there is a significant crime and detection problem in the region and particularly in the study area. Acquisitive crime is often opportunistic in nature. Low detection rates however are likely to impact the willingness for communities to engage in self-policing due to low confidence in law enforcement agencies.

9.3.2: Demographics

Trinidad currently has an estimated population of around 1,223,916 with a population density of 261 per sq. Km of land. It has maintained a gradual population density increase during intercensal periods and has an estimated urbanisation rate of 2.21% (2010-2015) (See chart 9.1). Whilst the population density figure is low, it is estimated that only half of the island is populated due to dense forestation and swamp land.

Chart 9.1: Population count per decade: Source, Census 2011



As previously mentioned there is historic ethnic tension in Trinidad which has consistently caused a political divide. The population is predominantly African (32.4%) and East Indian (35.4%) with 15% mixed other and 7.7% mixed African and Asian. The two main religions are Protestants (32.1%), Roman Catholics (21.6%) followed by Hindu (18.2%) and Muslim (5%). This means that due to the ethnic heterogeneity the country still faces, the risk of conflict still remains.

With a specific focus on the Tunapuna/Piarco municipality, unemployment rates have fluctuated in recent years due to the global recession. In February 1993 it was at its highest with 21.1% of the population being unemployed. Unemployment rapidly decreased over the coming decade, increased again in 2009 from 3.9% to 6.7%, reduced to 4.8% then peaked again to 6.3% in January 2011. Since then unemployment has gradually reduced to a record low currently at a rate of 3.1% (Trading Economics 2015).

It is significant that persons aged 20-24 have a slightly higher rate of unemployment at around 7% which is also the average age of the university student population. This is also the age category most at risk of offending and most at risk of victimisation and therefore poses an increased risk to the study

area. For both offenders and victims of murder, “unemployed” features the highest occupation at 81.85% and 42.8% respectively (Freedom of Information Request).

Data on child poverty is limited but the Ministry of Social Development (2005) calculated a figure of around 17%. There is a growing recognition that children in Trinidad suffer from various forms of abuse, exploitation, discrimination and neglect. Neglect is considered a serious problem in Trinidad and the The T&T Strategic Actions for Children UNICEF Work Plan 2013-2016, (UNICEF 2013) consider the root cause of neglect and poverty to stem from unemployment and lack of financial support from fathers.

9.3.3: Economy and Inequality

In aggregate, Trinidad suffers very little of the economic stress witnessed throughout the rest of the tropical archipelago; this is primarily due to the abundant oil and gas production. However, the country suffers from gross inequality. The Human Development Report 2014 (United Nations 2014) confirms that 38% of the Trinidad population are in multi-dimensional poverty.

The current Prime Minister is East Indian Kamela Persad-Bissessar from the United National Congress. Since election she has been faced with inequality, underemployment, rising drug related corruption and violent crime most of which the Index of Economic Freedom report (Miller and Kim 2015) considers to “*divert resources and damage the rule of law*” (2015:434). The UN Human Development Index (United Nations 2014) classifies Trinidad as a highly developed country based (although this was debated earlier) primarily on government debts which are the lowest in the western hemisphere and the oil and gas industry which nets the country at roughly \$4.5bn per year. It is one of the richest Caribbean nations and over 40% of GDP and 80% of exports are provided by hydrocarbons (Miller and Kim 2015). With a more recent focus on natural gas, oil production has declined in the past 10 years, however reserves are being boosted due to fiscal incentives for investments in onshore and deep water acreage. What has been considered problematic however is that the wealth from Trinidad’s oil industry is considered to be unevenly distributed and patterns of

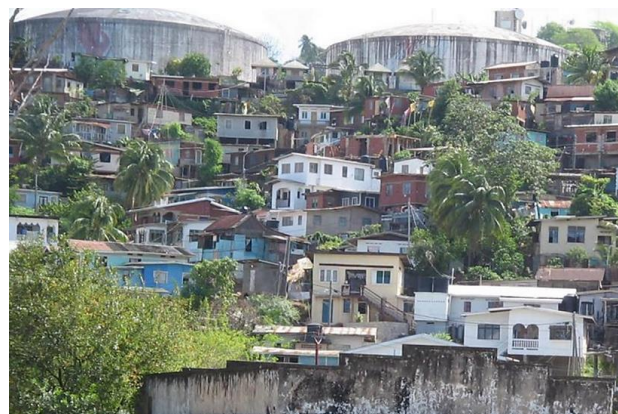
high consumption and inflation have placed pressures on the social and political system (Braveboy Wagner 1989).

The inequalities present in Trinidad puts the country in a very vulnerable position. The prosperity of the country is obvious in areas such as Port of Spain (POS), Trinidad's capital and more northern parts of the island where the majority of the country's white population reside. POS has tower blocks of government offices, 5* hotels, busy waterfronts and promenades (see plate 9.4) yet poverty cannot be avoided in areas such as Laventille, Beetham Gardens and Bangladesh due to sprawling slums, corrugated iron sheets and poor or non-existent sanitation and water systems (See plate 9.5).

Plate 9.5: POS (Source, Google)



Plate 9.5: Laventille



With such high levels of inequality, it is clear why problems associated with drugs and weapons are so rife and likely to provide an attractive way of life for many residents with few if any alternative opportunities. This problem is also exacerbated by a society which, as discussed earlier, is suffused by violence and corruption. A study conducted by Kirton et al (2010) revealed that 60% of respondents do not believe that the government has effective programmes dedicated to alleviating poverty and inequality in the population. Media reports also indicate that corruption in this part of the Caribbean means that the wealth of the island does little good to society and actually “*feeds the criminal underground*” (Wigglesworth 2014). Despite the apparent aggregate wealth of Trinidad, in 2010 a

survey revealed that 88% of the population felt that the country was still in an economic crisis and that the responsibility lies in the hands of the government (Kirton et al 2010).

9.3.4: Crime Prevention

Crime Prevention programmes are typically managed and implemented through the Ministry of National Security whose divisions represent the Police service, Defence force, Fire service, the cadet force, immigration division, disaster preparedness and the national drug council. The Citizen Security Programme (CSP) is an initiative of the Ministry which aims to reduce crime and violence in selected communities in Trinidad and Tobago. The ministry finances interventions addressing risk factors in the communities through the three components of local community action, assistance to the TTPS and Institutional strengthening of the Ministry of National Security. The main goals and objectives of the CSP are:

- A reduction in the level of homicides, robberies and wounding's
- An increase in the perception of safety
- A reduction of injuries related to firearms, child maltreatment, domestic violence and youth violence
- An increase in the collective efficacy to prevent violence

(CSP 2014)

The first component of 'Community Action' is primarily social crime prevention. This includes a range of initiatives such as councils that promote positive values and norms to help identify and intervene with families at risk of violence. It conducts Rapid Impact Projects (RIP's) based on a two category system of improving physical infrastructure and engaging with local communities through training, sports and equipment provision. Peace promoters also improve safety by linking neighbours to health care and social services, educating peers about violence prevention and tackling risk factors associated with parenting, discipline and conflict resolution. Violence prevention programmes are also carried out in schools to equip parents, teachers and students with the skills needed to address school violence and youth services are provided which focus on skills programmes, educational resources

and support from development personnel. Substantial funding is also allocated to strengthening communities through focusing on young people who are being drawn into delinquent or illicit activities, gangs or other criminal enterprises (CSP 2014).

The second component focuses rehabilitating police stations and improving citizen centred services, increasing computer equipment and basic IT training to process police reports, establishing victim support units and counselling support officers to provide psycho-social services to reduce work related stress and improve police-public relations.

The final component which focuses on institutional strengthening of the Ministry of National Security aims to finance equipment, software and technical assistance to develop crime observatory, improve evidence based policies and formulate national crime and violence reduction plans (CSP 2014).

Crime prevention in Trinidad is primarily social crime prevention and involves a range of primary, secondary and tertiary prevention methods. Policing is largely reactive, although the CSP seems to be trying to direct more prevention methods through a citizen centred service. What is largely missing from crime prevention initiatives in this region is the focus on crime settings and situational determinants of crime and disorder. Significantly for the research reported in this thesis, there has been a growth in interest in situational crime prevention methods through various government tenders as mentioned earlier which have requested input of CPTED and situational crime prevention methods. However, there is little evidence to demonstrate if these projects were carried out or what impact that they had on crime.

9.4: Conclusion

The Tunapuna/Piarco municipality of Trinidad will be used in this thesis as a case study for testing the impact of social context analysis in CPTED planning within a project coordinated by Town and Country Planning Division (TCPD). TCPD were chosen as the most suitable body for collaboration in Trinidad due to the importance of their role in enforcing policies and standards for building control and the wider remit of planning and urban design in this region. The Government department had also

recently proposed a new project (St Augustine Education City Project) within the municipality of Tunapuna/Piarco aimed at developing a new pedestrian backbone between university campuses to increase pedestrianisation. An objective of the project was to increase safety to residents through principles of CPTED although there was no understanding or plans as to how this would be conducted. This project therefore provided an excellent case study location to engage with TCPD and analyse the impact of local context information on professional's ability to consider and apply CPTED to the St Augustine Education City Project.

The current state of Trinidad poses a number of obstacles for effective CPTED application, hence its value in this research. Corruption in many sectors of the Government is rife which impacts the quality of life of citizens, as well as the potential for successful CPTED policy integration. From the literature reviewed here it is also clear that the attitudes and mind-set of many Trinidadians is deeply rooted in a general sense of despondency due to continuous and prolonged violence and repression which is likely to have a negative impact on the social sustainability of communities. This may question the impact that CPTED is likely to have upon a country with such high corruption and deep rooted social problems. Having said that, UN funding to support the development of the region and the recent interest in CPTED initiatives from the Town and Country Planning Division and Citizen Security Programme confirm that CPTED is not totally reliant on the police force in the way that other measures are and therefore steps are required to embed the concept within the mind set of government and publics alike. It is the inherent crime issues, lack of crime prevention planning legislation and the expressed need for CPTED measures that make the area suitable for exploring barriers to interpretation and application of the CPTED concept and the importance of understanding the social context of crime risk, how this impacts on CPTED application and how crime prevention can integrate with broader planning and sustainable development agendas.

Chapter ten will discuss the first stages of the fieldwork and collaboration with professional organisations in the built environment field.

Part D: Section 1

CHAPTER 10: Professional Focus Groups

Trinidad as a study location has been discussed in detail and the physical and social problems manifested in the region are self-explanatory. These problems make Trinidad an important location for empirical analysis due to need for alternative crime prevention methods and the blank canvas from which to analyse the impact of context information on crime risk since there is currently no situational crime prevention incorporated into current practice. Whilst Trinidad was discussed as the main study location, the fieldwork triangulated the results of the empirical analysis with two other organisations, namely the Designing Out Crime Group of Wales, and an independent planning consultancy called OpenPlan. With different, geographic, political and institutional contexts, these groups increased the integrity of the research findings whilst providing opportunities for comparatively analysing variables between each of the three organisations.

The fieldwork strategy operated in two separate parts and four distinct sections as illustrated in figure 10.1. The two separate parts of the fieldwork were designed to emphasise the difference between testing the transferability of both the CPTED framework and model for evaluating social context and for evaluating the impact of context provision. In order to achieve this objective, the specific questions shown in Figure 10.1 were formulated.

Figure 10.1: Fieldwork stages

Part D

Section 1: (present chapter) Are there barriers to the understanding and implementation of the proposed CPTED framework?

Section 2 (chapter eleven): Does the model for evaluating social context provide suitable characteristics for analysing risk to crime, fear and the overall quality of life?

Interim section (see Methodology and Appendix I): Can the model for evaluating social context lead to useful context information on crime, fear and the quality of life?

Part E

Section 1 (chapter twelve): Does the provided social context information impact upon professionals' ability to make informed decisions for CPTED

Part D section one therefore explores the transferability of CPTED language and terminology to built-environment professionals as well as identifying contextual barriers to implementation. Part D section two explores the social sustainability indicators with local community residents in and around the St Augustine region of Trinidad. This identified specific characteristics of the physical and social environment which impact upon crime, fear and the overall quality of life of citizens. Part D section three develops context information on crime, fear and the quality of life of residents in St Augustine and discusses the role of context information in this thesis. Part E section one explores the transferability of the CPTED framework following provision of local context information to evaluate if the knowledge and understanding of CPTED changes as a result of the information provided. Findings from this section confirmed the transferability of the CPTED framework and the impact of context information on CPTED planning.

10.1: Section 1 Participants

For the purpose of this analysis, barriers to the transferability of the CPTED framework will be referred to as ‘communication barriers’ since the framework is considered as a tool for communicating knowledge. Barriers to practical implementation will be referred to as ‘application barriers’.

During this research, focus groups were conducted with three separate organisations of professionals in the built environment field. This ensured triangulation of the results obtained and reduced the likelihood that the results would reflect the knowledge of a single organisation rather than built environment professionals in general. Also, given the multi-disciplinary nature of CPTED and the range of stakeholders involved in its process, it was important to conduct this analysis with more than one professional discipline.

Trinidad’s Town and Country Planning Division (TCPD) was considered an important organisation to collaborate with as discussed in chapter nine. As an organisation, TCPD control planning decisions in the built environment and therefore have the power to regulate urban design changes and enforce regulatory policies where needed. At the time of the study, there was no evidence of CPTED or crime prevention being integrated to the Trinidad planning process and this therefore reduced bias of prior knowledge and experience of CPTED in this context.

OpenPlan Consultants in Lincoln were the second organisation to be included in this research. This organisation represented a group of Planning consultants and Architects in the UK who developed Trinidad’s National Spatial Development Strategy in collaboration with Central Government. They have prior knowledge of Trinidad’s context but no engagement with CPTED. As an organisation, Openplan work creatively and collaboratively to deliver internationally relevant projects that improve wellbeing and support healthy and sustainable communities. Their practice uses spatial planning expertise and cultural experience, incorporating a range of experience in place making, urban and regional planning, urban design and community engagement.

The Welsh Designing out Crime Group (DOCG) were the final organisation to be included in this research. This group of professionals represented a diverse range of backgrounds and professional disciplines ranging from Police officers to Architects and local housing providers. The association brings together representatives of the Designing Out Crime community from across all of Wales and therefore not only broadens the geographical scope of this research but also reflects a variety of policy procedures, knowledge and expertise.

The latter two organisations were a result of convenience sampling since links were already made with both organisations which enabled easy access within a short timeframe. What is important to recognise however is the important role that both organisations play in providing varied geographical, socio-political contexts to ensure that the findings are not just a reflection of one organisation's ability to understand information.

All three organisations are independent from each other and their professional expertise, experience and geographical location is unique. What is also important and vital for this research is the position of each organisation in terms of planning and crime prevention. TCPD are regulators of the built environment and are in a position of power in terms of planning applications submitted by private developers and planning consultants (such as OpenPlan). In between this collaboration, particularly in the UK DOCGs act as a consultation service for integrating crime prevention into planning applications. All three organisations effectively have conflicting priorities and goals and are therefore suitable for the triangulation of feedback obtained post context provision.

Collectively, all three organisations cover three countries, two continents, seven professional disciplines and both Government and non-Government organisations. The organisations chosen for this analysis therefore represent a diversity of professional disciplines and different geographic and political contexts from which they operate. It is therefore argued that conclusions drawn from this analysis will be unbiased and of high integrity.

10.2: Analysis

This section of the fieldwork conducted focus groups with the three professional organisations. The focus groups aimed to establish the transferability of terminology in the proposed CPTED framework and to identify contextual barriers to implementing CPTED within the planning process. The initial rounds of focus groups were replicated across the three separate organisations.

Focus group 1 contained 8 Town Planners, 3 Land Use Planners and 2 Graduate Planning Interns from Trinidad TCPD.

Focus group 2 contained 2 Town Planners, 1 Community Engagement Officer, 1 Architect and 1 Urban Designer from OpenPlan Consultants.

Focus group 3 contained 4 Designing out Crime Officers, 5 Architectural Liaison Officers, 2 Architects and 1 Housing Provider.

Each focus group used the same discussion guide which contained questions exploring participants understanding of each of the CPTED concepts and principles. The discussion guide can be found in Appendix D. What was important for this analysis was to ensure that no bias was inflicted on the participant's response and this therefore required the researcher to take a passive position in the discussion. This was done by ensuring the style of the focus group questions did not influence responses in any way and to ensure that prompts were used to facilitate discussion instead of helping the participant answer the questions. The role of the researcher was primarily to maintain a focused discussion and obtain the required level of detail from respondents.

Qualitative coding techniques were used to categorise participant responses into the following categories (See table 10.1)

Table 10.1: Coding categories

Main Category	Generic Category	Sub Category	Context Category
Application Barrier/ Communication Barrier	Generic conflicts in Multi- Disciplinary working	Poor info sharing/partnership working	Lack of effective partnerships for information sharing Lack of effective partnerships for implementation support Inadequate policing to sustain operational tasks Inadequate partnerships for public maintenance Lack of information sharing for standard enforcement Lack of partnerships to promote CPTED benefits Lack of communication re crime impact Poor training relies on effective communication and information sharing Lack of training and regulation limits transfer of knowledge
		Time	Understaffing restricts effective planning
		Conflicts of power	Developer has the final say Design advice over ruled by ATPP
	Conflicts in Multi- Disciplinary working specific to CPTED	Conflicting disciplinary interpretation of CPTED language	Lack of detail to support principles and application
		Conflict of priorities (e.g. safety vs aesthetics)	Crime and safety vs costs Aesthetics vs profit Crime and safety vs developer's priority Crime and safety vs aesthetics Crime and safety vs streetscape Crime and safety vs permeability Quality vs quantity of land Economics vs sustainability Increased pressure due to requirements for funding Private vs public housing standards

		Bureaucratic conflicts which devalue the worth of CPTED	<p>Clients response devalue CPTED advice</p> <p>No incentive to engage</p> <p>Lack of engagement from planning professionals</p>
		Institutional restrictions	<p>Social programming not the role of the planner</p> <p>No power to regulate building design specifications</p> <p>No institution for maintenance of public and private spaces</p> <p>Design is not in a planner's job role</p> <p>TCPD do not ask for target hardening specifications</p> <p>Image Management not part of planning legislation</p> <p>Image management not considered at pre planning stage</p> <p>Lack of funding for evaluation of best practice</p>
		Policy conflict	<p>Planning standards restrict consideration of wider context</p> <p>Legislation restricts effective use of CCTV</p> <p>No standards to enforce surveillance or regulate quality</p> <p>Guidance is so diverse that people just implement minimum standards</p> <p>Building standards do not incorporate crime prevention</p> <p>No policy integration due to the lack of social responsibility</p> <p>Disconnect between central and local government</p>
		Knowledge gaps	<p>Developers don't know about CPTED</p> <p>Not enough knowledge to advise on CPTED</p> <p>Not enough knowledge to implement CPTED</p> <p>No understanding of social context to apply and transfer knowledge</p> <p>Misunderstood/poorly translated social issues</p> <p>Draftsmen do not know about CPTED</p> <p>CPTED excessively focuses on target hardening</p> <p>Poor quality CCTV systems due to lack of knowledge</p> <p>Staff do not know how to operate cctv</p> <p>Knowledge retention is poor due to lack of training</p> <p>Lack of understanding of social factors for evaluation</p>
		Conflicting principles	<p>Activity support conflicts with Boundary Definition and Target Hardening</p>

	Conflicts specific to CPTED	Negative effects	Access control causes displacement Target hardening creates a negative image Target hardening causes social exclusion Surveillance breaches privacy Target hardening restricts surveillance and increases fear
		Not sustainable	Image management and maintenance unsustainable Sustainability is compromised by funding resources Sustainability is compromised by poor management of community engagement Sustainability is compromised by poor resilience within organisation
		Not flexible	CPTED/SBD standards are too specific
		Not adaptive	Not adaptive to streetscape
		Not clear	Positive reinforcement definition is unclear
		Reliant on other principles	Surveillance requires sidewalks for public use Natural surveillance is not always carried out by the public
	Conflicts specific to area context	Culture	Individual lots restrict informal surveillance Old villages will not allow for controlled development Image management portrays affluence Physical barriers portray something to hide Crime in Trinidad is too extreme to sustain CPTED The planning process hinders surveillance Media fuels negativity towards crime prevention efforts
		Crime Types/Offender MO	Natural Surveillance is counterproductive to Burglary MO CPTED concepts not suitable for crime in Trinidad
		Lifestyle	Affluent rely on private security for protection
		Economy	Gas industry increases vehicles and decreases sustainable use of public space Transiency of population impacts guardianship

In line with the emergent methodology strategy adopted in this thesis and as outlined in chapter three, the categories derived completely from participant responses. This ensured that there was no bias or influence from the prior knowledge of the researcher and that the categories formed reflected the

nature of barriers present in the responses of participants. The context of all categories will be discussed below. Analysis sheets for all coding and evidence and a focus group pilot can be found in Appendix E.

For ease of reference, all participants discussed in this study will be referred to by number, gender and profession e.g. P1F Town planner (participant 1, female, town planner). This will help demonstrate the variety of perceptions and responses across different demographics.

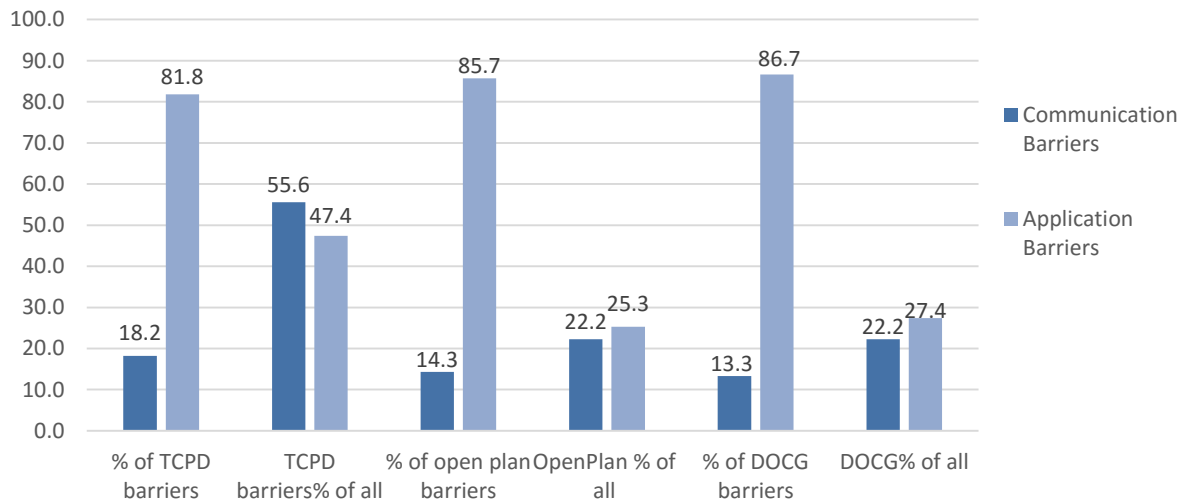
10.3: Results

10.3.1: Communication Barriers

Participant responses varied across all three groups and within each group. Generally, the proposed CPTED framework was well received and there were few communication barriers present which reflects a well-structured and transferable framework for CPTED. Out of a total of 113 barriers identified, communication barriers were present in 18% of TCPD barriers (55% of all communication barriers), 14% of Openplan barriers (22% of all communication barriers) and 13% of The DOCG barriers (22% of all communication barriers). Overall, across all three organisations, Communication barriers represented only 15% of all barriers identified. Results confirm that the communication of the

proposed CPTED framework is relatively positive and there are few barriers in the communication of its concepts and principles (See Chart 10.1)

Chart 10.1 Percentage of Communication and Application Barriers per organisation



TCPD had the most communication barriers (18%) present which may be considered a reflection of the geographical location and varied language between continents. Further analysis of the barriers however suggested that participants highlighted a lack of understanding by other professions in the built environment field such as developers and the Advisory Town Planning Panel (ATPP). Other responses from TCPD suggested that lack of effective partnerships between central and local government and between local government organisations themselves ultimately hinders knowledge transfer due to poor communication protocols. Some participants argued that better education to all will positively impact CPTED knowledge transfer since a lack of understanding reinforces a reluctance to engage.

Amongst Open plan participants, initial interpretation of CPTED was that it was excessively focused on Target Hardening methods. Provision of the CPTED framework later in the focus group however altered the interpretation of CPTED by confirming that *“I didn’t realise there were components of CPTED which focused on how people perceive the environment; that’s really good”* (PM1 Town Planner). This result confirms the importance of theory in the structure of the CPTED concepts and the impact this has on professionals’ ability to understand the anticipated outcome of each component part.

Other communication barriers within Openplan related to a disconnect between local and central government, this is believed to cause confusion in what protocols to follow and the best source of guidance for crime prevention. P4M, Urban Designer, highlighted that the confusion of best practice emanates from guidance manuals such as the National Planning Policy Framework (NPPF) whose *“reference to crime is very vague and woolly and you can kind of interpret it in many ways. It doesn’t provide the level of detail that it should”*.

The Designing Out Crime Group contained just 22% of communication barriers overall. One practitioner highlighted that they did *“not know what positive reinforcement is”* (P3M CPDA) which is perhaps surprising given their profession as Crime Prevention Design Advisors. This is assumed to reflect SBD’s overt focus on security and increasing the physical protection of the shell of properties at the expense of broader social components. When positive reinforcement principles were discussed further, the general consensus was that it was understood, but it was considered to be unsustainable due to a lack of public engagement and limited resources from local Government. Participant’s sense of reliance on government resources to sustain this principle reinforces that current practice in the UK lacks community engagement. It also reinforces the lack of consideration of the way in which the physical and social environment can negatively impact community’s perception and use of public space, *and* engagement in operational behaviour required to sustain the CPTED principles.

Activity support was also recognised within the positive reinforcement concept as a principle that is not very well understood. Participants suggested that this was because academic terminology is different to that used in practice and that in practice there is a lack of definition provided (P1M CPDA). This reinforces the results of Chapter seven which demonstrate a gap between research and practice knowledge and that structured guidance in practice is limited. Later in the focus group, the issue of conflicting guidance was revisited; (P6M CPDA) highlighted that *“there is so much different guidance out there, some more in depth than others, this makes people just do what is absolutely necessary in order to get through, there is no real passion to engage with the evaluation and monitoring of any CPTED design”*. This opinion was also reinforced by the recognition that there is a

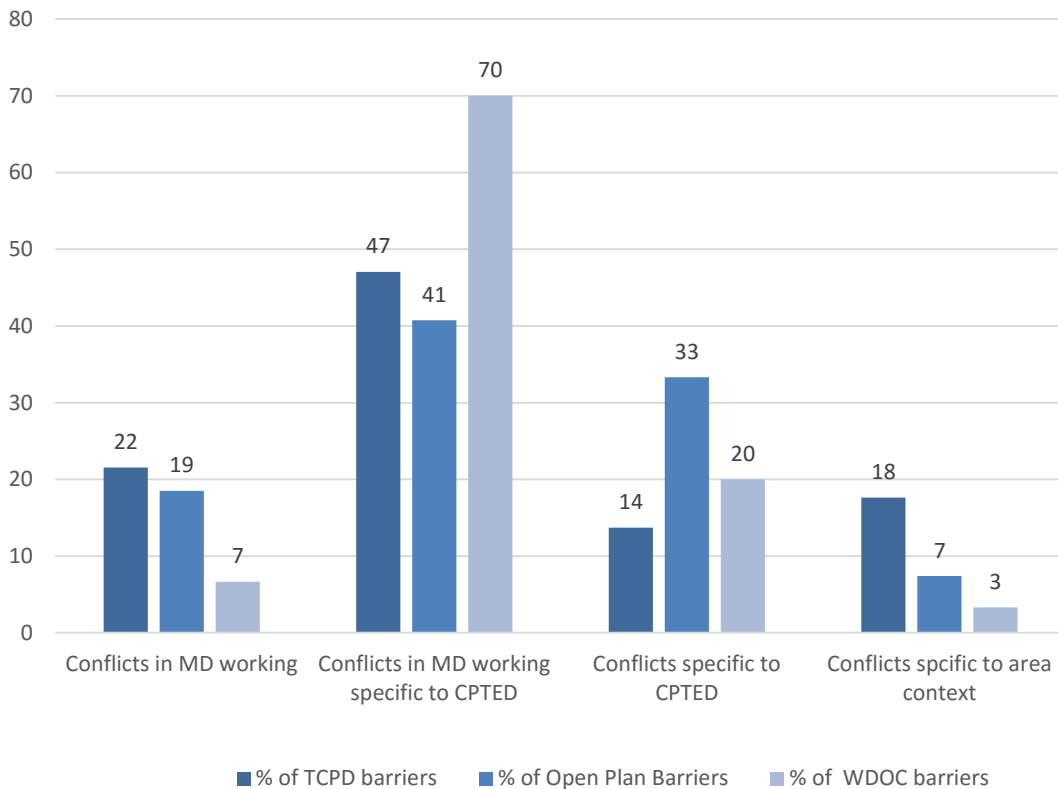
general lack of training and regulation which restricts the understanding and transferability of CPTED knowledge. It was suggested that *“integration of CPTED principles into sustainable development policies would massively improve engagement and transfer of information...Once something gets put into the planning system people have to pick it up”* (P8M CPDA). Recognising the need for CPTED integration into sustainable development policies reinforces the argument highlighted in Chapter eight confirming the importance of CPTED being integrated into sustainable development policy and practice to improve engagement and transferability.

10.3.2: Application Barriers

Application barriers were evidently more prominent in the focus group results, featuring 84% of barriers overall. TCPD contained 81% application barriers within their focus group which represented 47% of all application barriers across the three organisations. Application barriers within OpenPlan featured in 85% of the barriers identified in their focus group, representing 25% of all application barriers across the three organisations. The Designing Out Crime Group fractionally had the highest percentage of application barriers (86%) emerging from their focus group, yet these only represented 27% of application barriers overall (See Chart 10.1). It is assumed that the DOCG participants will be more familiar with the implementation of CPTED principles and therefore have more practical experience of application and the barriers it presents; hence the higher ratio of application barriers having emerged from that focus group.

Further exploration of the categories which emerged from the qualitative coding of participant responses revealed that the conflicts in multi-disciplinary working which are specific to CPTED was most frequent in all three organisations. Both OpenPlan and DOCG identified conflicts specific to CPTED as the second most frequent category; Generic conflicts in multi-disciplinary working coming second for TCPD. The least frequent category to emerge from participant responses were conflicts specific to the development or team context (See Chart 10.2).

Chart 10.2: Generic category frequency per organisation



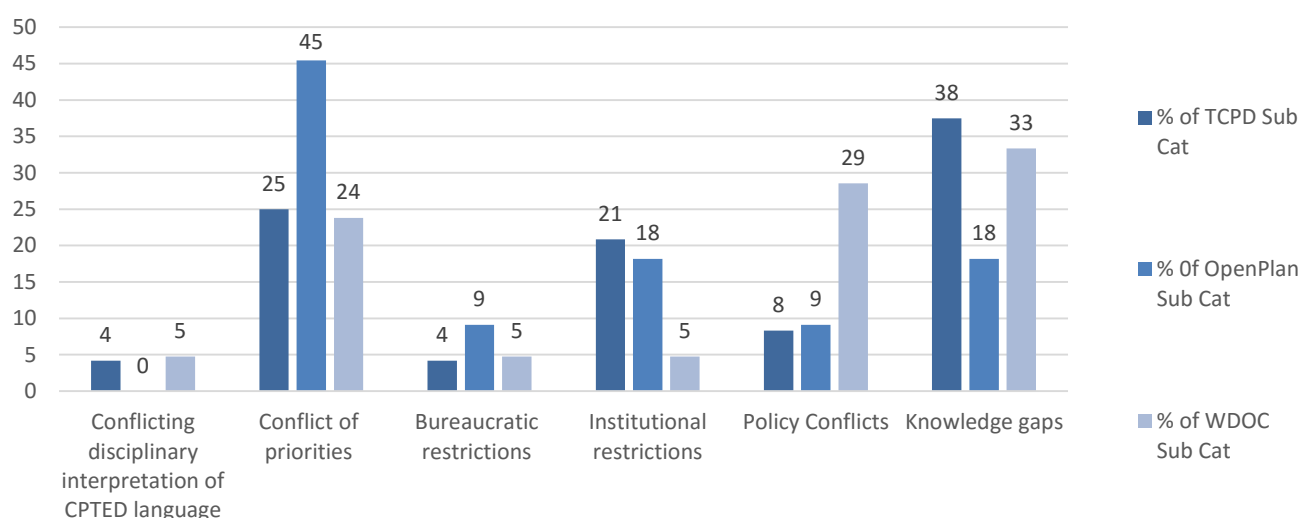
This result confirms conclusions drawn from the literature review and subsequently chapters five and seven with regards to the communication and collaboration of CPTED stakeholders. Conflicts in multi-disciplinary working are to be expected when stakeholders with different priorities are involved. However, conflict between organisations which specifically relate to the CPTED concept consistently appears to be due to a lack of knowledge, conflicting agendas or inconsistent policy and guidance as discussed in sections 2.4, 2.5 and 2.6 of literature review.

Each of the main generic categories will now be discussed in detail and the sub categories which emerged will be identified

10.3.2.1: Conflicts in Multi-Disciplinary Working Specific to CPTED

Within the generic category of conflicts related to multi-disciplinary working which are specific to CPTED, there a number of different sub categories (See Chart 10.3)

Chart 10.3: Sub Categories of Conflicts in multi-disciplinary working specific to CPTED



OpenPlan have the highest frequency of conflicts which are categorised as *conflicts of priorities* (45%). Conflicting priorities relates to stakeholder priorities regarding the ultimate aim of a development process, be it profit, environmental sustainability or crime reduction for example. The context of OpenPlan barriers within this category primarily relate to conflict between aesthetics and security in which they argue that crime prevention principles effect the layout of buildings which starts to lose the aesthetic of a settlement. Another conflict identified was the issue of crime prevention (in reference to alley gates and cul-de-sacs) vs permeability. Participants argued that in planning, maximum permeability is usually desirable in order to improve connectivity, however there is an awareness that increased permeability increases access and egress opportunities for criminals. P1M Town Planner, raised an important issue with regards to quality vs quantity of land. He highlighted that in the UK there is a demand for housing which causes developers to maximise housing density which ultimately compromises the quality of the environment.

The context of TCPD barriers within this category highlighted conflicts between crime and safety against the profitability of a development in which participants expressed concerns that planning is largely dominated by developers whose main goal is to obtain maximum profit from a development. Other conflicts include aesthetics vs profit, particularly relating to target hardening mechanisms and

image management and maintenance. Participants argued that cost over rules many planning priorities and that land and building owners, both commercial and residential will use the cheapest security measures in order to maximise surveillance (P1M Land Use Planner; P10F Planning Intern; P12F Town Planner; P3M Town Planner). This often comes in the form of iron bars, steel shutters and barbed wire that increase fear and create a negative social stigma that crime in the area is problematic.

DOCG participants were in agreement with many of the conflicting priorities already mentioned; however, an additional barrier was identified with regards to the requirements for funding obtained from the Government. Participants argued that because many housing developments in Wales are funded by the local Government, SBD compliance is compulsory and in order to obtain funding, specific requirements must be met (e.g. play areas and communal spaces). It was argued that developers add features to a development which have not properly been thought out and is therefore implemented haphazardly in a quest for funding grants (P10 Architect). Participants also highlighted that social housing is often well regulated in terms of crime prevention design yet private developers rarely consider crime in their developments and are largely driven by profit. It is acknowledged that the conflicts mentioned here may be specific to the Welsh context due to planning regulations, Government funding protocols and statutory SBD engagement.

Knowledge Gap is the second highest sub category within the conflicts in multi-disciplinary working which are specific to CPTED. This sub category is also the highest amongst TCPD (38%) and the DOCG (33%) participants. TCPD displayed a number of knowledge gaps, particularly with regards to the lack of knowledge of private developers. Participants suggested many stakeholders involved in the planning process do not understand the benefits of CPTED which in turn prevents them from engaging in CPTED planning. They also argued that as an organisation, they do not consider themselves to have adequate knowledge of CPTED to advise other stakeholders and that they do not have enough knowledge about social conditions in the area and how this impacts on crime (P1M Land use planner; P9M Town planner; P10F Planning Intern). This suggests that the framework alone is not sufficient for knowledge transfer and further contextual information is required. A further important aspect highlighted within the Trinidad planning process is the position of the Advisory Town

Planning Panel who can over turn decisions made by TCPD without a sound understanding of the context of planning advice given by TCPD.

Feedback from DOCG also indicated that knowledge was lacking regarding evaluation of crime prevention projects. Participants argued that because the nature of CPTED is to prevent crime, there is no way of evaluating its effects unless crime is already a problem and that there is little guidance on alternative variables for evaluation (P5M CPDA; P11M CPDA). This response confirms that confusion is still present with regards to localised analysis and the model proposed in chapter eight is a potential solution to enable professionals to consider variables for measurement and evaluation of initiatives beyond crime statistics.

OpenPlan predominantly highlighted aspects of target hardening to be problematic in terms of their understanding and interpretation of the principle. Participants argued that they are unsure of what measures could be used to restrict access to targets without it being intimidating and creating a negative image; and also that 80% of contemporary CPTED measures focus on target hardening (P1 Town Planner; P4 Urban Designer). This indicates that there is some uncertainty about the variation of access control components which has been miss conceived as hard security. Recognition of this communication barrier was valuable at this stage of the research because it was anticipated that provision of local context information with regard to security and the image it portrays as well as identification of wider social conditions relating to crime, fear and quality of life would broaden participant's perception of CPTED and their knowledge for practical implementation.

The DOCG highlighted ***Policy Conflicts*** as a prominent conflict in their experience of CPTED implementation (29%). Much of this related to CCTV operation and the constraints upon police as a result of legislation which restricts its use with regards to privacy. Participants also confirmed that there is significant diversity of guidance in policies and standards across the built environment field which results in practitioners complying with the minimum requirements without a real appreciation of its impact or further long term benefits that crime prevention could have (P7M CPDA). This

reinforces the point made in chapter six and 7 with regards to the impact of poor CPTED guidance and knowledge transfer amongst CPTED practitioners.

Policy conflicts amongst OpenPlan and TCPD were lower at 9% and 8% respectively. P1M Town Planner (OpenPlan) highlighted a disconnect between local and central government in that central government policies “*are pulling against what local government are asked to do by the previous central government*”. The constant change in policies means that guidance to professionals in the field is restricted and contradictory. Comments also reflect the communication issues highlighted in previous chapters in that a formal statutory consideration of CPTED needs to be embedded within planning and sustainable development policies.

TCPD highlight that current planning standards restrict consideration of crime and its wider social context in that there are a particular set of building standards that planning must adhere to which specify floor to wall ratios and do not allow for exploratory analysis of the wider community (P1 Land Use Planner; P9M Town planner). Building standards do not accommodate CPTED planning or consideration of the wider social context and therefore reinforces the need for the integration of crime prevention principles into statutory policies used in the planning process.

Institutional restrictions are the next frequent conflict identified by all three organisations. TCPD had the most (21%) which predominantly focused on planners not being responsible for crime prevention and it not being part of their job specification. Participants described their role as “*just assessing proposals for a development*” (P11M Town Planner). TCPD as an organisation has little power due to governance structures and according to participants, they are often over ruled by the Advisory Town Planning Panel and the Minister of Planning, neither having qualifications or experience in this field. Their position as regulators and controllers of the built environment is therefore devalued due to a lack of power to conduct those functions. This may negatively impact on the planning division’s scope in terms of the review processes they take and recommendations they put forward. Other institutional restrictions highlighted by TCPD is that there is no organisation to carry out maintenance of the built and natural environment which means that it is just left to private owners where no laws

are in place to ensure maintenance is carried out. This significantly increases the risk of unmaintained areas becoming run down and the opportunity for crime to increase.

DOCG identified that their role as crime prevention design advisors was limited due to lack of funding (P12M CPDA). This prevented them from taking time to evaluate best practice for crime prevention; including the evaluation of social context. Institutional restrictions highlighted by OpenPlan suggested similar conflicts to TCPD; concepts such as Image Management are not included in the remit of planning and urban design which again reinforces the absence of more socially orientated concepts in practice.

The least frequent sub categories for conflicts in multi-disciplinary working which are specific to CPTED were bureaucratic restrictions and conflicting disciplinary interpretation of CPTED language. ***Bureaucratic conflicts*** expressed by OpenPlan particularly focused on the lack of incentive to engage with CPTED and SBD at the pre planning stage (P3M Architect). This meant that crime prevention was often an after-thought and not built into the lay out of the environment. Participants suggested that target hardening and fortification methods were relied upon as a form of security following when properties have been built, which is likely to be both unsustainable and ignorant to the cause of crime problems in the area.

The DOCG highlighted that bureaucracy restricted engagement between CPDA's and planners once planning applications had been submitted. Participants expressed that engagement at the pre planning phase is rare which therefore restricts the impact they can have on the design of a development (P12M CPDA).

TCPD suggested that clients of the planning division often devalue advice by planners, particularly with regard to crime prevention or wider social analysis. Participants claimed that this often dissuaded them to actively discuss such issues since there was too much paper work involved which would likely be disregarded by the client (P12F Town Planner).

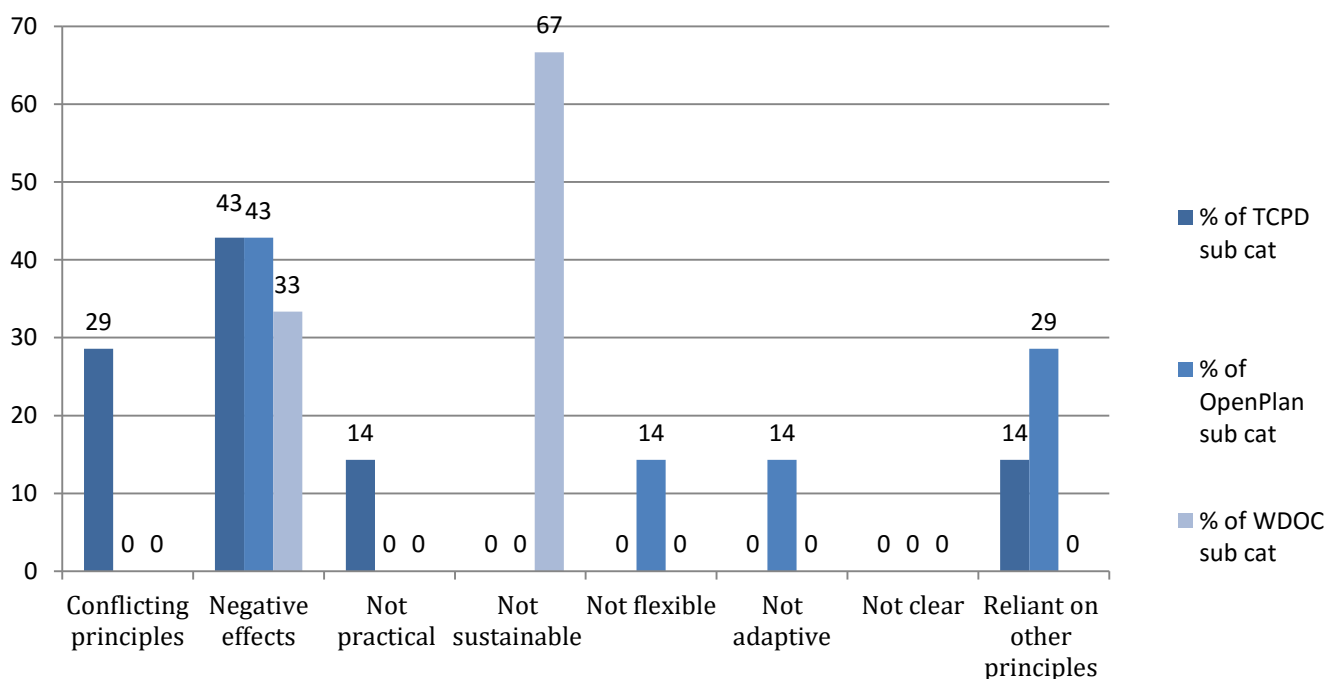
Conflicting disciplinary interpretation of CPTED language was the least frequent sub category of conflicts in multi-disciplinary working specific to CPTED. This represented only 5% of DOCG

responses within this category and 4% of TCPD within this category. DOCG responses related to their interpretation of academic terms within the CPTED framework as mentioned previously and TCPD responses related to a lack of understanding of the informal surveillance concept. Participants suggested that Surveillance had no relevance to design and therefore did not understand the concept of informal surveillance P12F Town Planner)

10.3.2.2: Conflicts Specific to CPTED

Conflicts specific to CPTED are associated with barriers to implementation or communication which are specific to the CPTED concept and not influenced by any other factors. Within this category there were eight sub categories (See Chart 10.4)

Chart 10.4: Sub categories of conflicts specific to CPTED per organisation



Negative effects were the most represented sub category by both TCPD and OpenPlan. Results from OpenPlan indicated that issues revolved mainly around surveillance and target hardening measures. Participants felt that surveillance was a breach of privacy and can affect community's attachment to a local area due to the perception that they are being watched (P2F Community Engagement Officer).

Participants also felt that target hardening measures are intimidating and create a negative image of a declining social environment (P1M Town Planner; P5M Planner). It was believed that such areas are avoided by members of the public which subsequently reduces guardianship and surveillance. These feelings were also shared by TCPD who highlight the impact on alienation in Trinidad as a result of intrusive target hardening measures. Breach of privacy was also mentioned by DOCG who highlighted that as CPDA's they receive many complaints by residents who feel CCTV cameras are looking into their houses (P1M CPDA). Whilst these are all valid comments, the context of the discussions suggests a lack of practical knowledge on the participant's behalf (particularly TCPD and OpenPlan), in that many of the examples they used for target hardening were obtrusive, fortification methods with little regard to natural forms of access control.

DOCG highlighted the *sustainability* of CPTED as the most prominent issue in this category which was interesting given that OpenPlan and TCPD highlighted no issues around sustainability. DOCG identified many practical issues regarding funding sources and management of public organisations and the impact this has on the sustainability and longevity of CPTED interventions. Participants suggested that sustainability is also compromised by a lack of resilience within the police organisation which meant that best practice is not disseminated to new professionals (P1M CPDA; P2M CPDA; P9F CPDA).

TCPD considered CPTED to have *conflicting principles*, particularly regarding the integration of physical and social components. Participants highlighted that boundary definition in commercial premises is counter-productive and does not support the activity of people traversing and creating an inviting environment (P12F Town Planner). Again, it could be suggested that a lack of understanding of boundary definition could be a key factor in the frequency of this issue as regarded by TCPD.

Both TCPD and OpenPlan also consider CPTED to be *reliant on other principles*. Openplan highlight that natural surveillance carried out by residents is not always achieved. Participants argued that nothing is set in stone or put in place to ensure that the public will respond to observed crime and anti-social behaviour (P2F Community Engagement Officer). Again, this reinforces the need for a social

component of CPTED which explores people's perception and attachment to an area and to identify if there are factors which may inhibit effective guardianship. TCPD confirmed this issue by suggesting that neither physical nor social characteristics in Trinidad support active guardianship by residents. Participants confirm that lack of pavements restrict natural guardianship but even where pavements are present, fear and perception of risk inhibit use of these spaces (P9M Town Planner). This reinforces the need for social context analysis to establish exactly what measures must be put in place to ensure that the required behaviour is achieved.

TCPD highlight that CPTED is *not practical* in the sense that in order to be transferable, more integrated training and education is required rather than the standard procedure of arranging stakeholder meetings with little or no practical understanding of CPTED amongst participants (P9M Town Planner). This is an important issue, particularly in a field which relies on multi-disciplinary engagement where prior knowledge is minimal. More conceptual guidance and training is therefore required to alleviate this issue and help improve the knowledgebase of professionals involved in the process.

OpenPlan considers that CPTED is neither *flexible* nor *adaptive*. Lack of flexibility relates to the specificity of CPTED principles, which OpenPlan considered to be too explicit which discredits broader issues relating to crime (P4M Urban Designer). This was in reference to SBD accreditation and reference was made to manufacturer specifications of doors and windows etc. These specifications are considered by participants to disengage potential developers due to the time and resources required; also that the specifications are removed from the broader social issues of crime and perception of public space and therefore become excessively focused on target hardening.

Adaptivity of CPTED principles also highlighted that the current standards do not allow for adaptation to the streetscape of the local area. It was suggested by participants that many old villages require design which maximises character and in turn this conflicts with crime prevention principles. Participants suggest that compliance with crime prevention standards therefore removes conditions

which otherwise positively impact social engagement and local community attachment (P2F: Community Engagement Officer).

10.3.2.3: Conflicts in Multi-Disciplinary Working

Conflicts in multi-disciplinary working identified barriers which were considered to be generic issues in multi-disciplinary or partnership working which were not specific to CPTED. Within this category there were three sub categories relating to partnership working, conflicts of power and time (See chart 10.5).

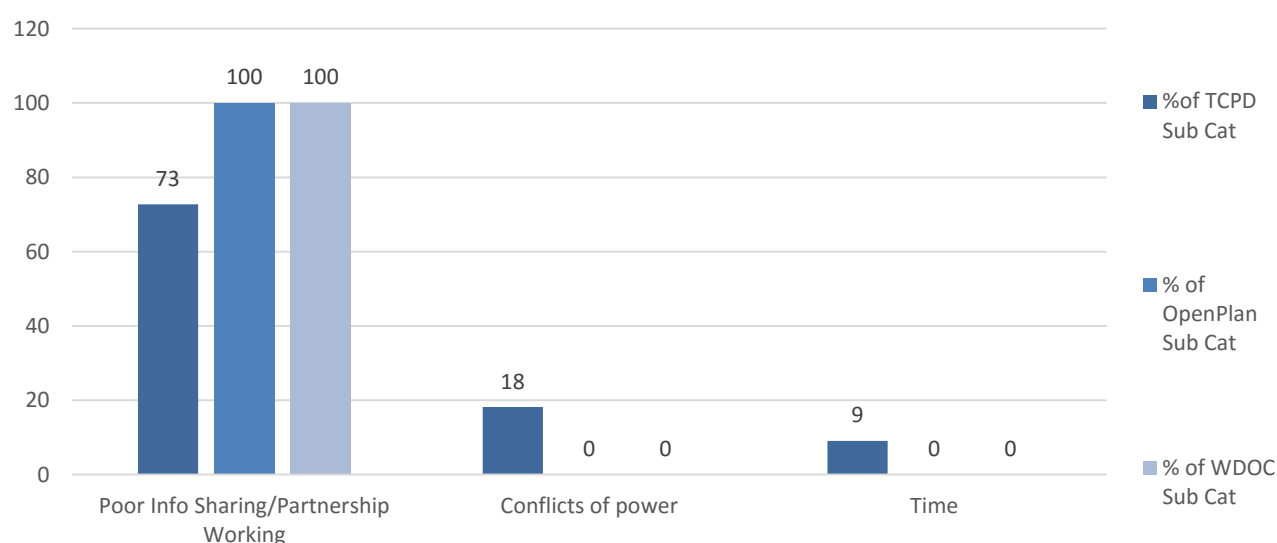


Chart 10.5: Conflicts in multi-disciplinary working per organisation

It is very clear from this chart that the majority of barriers to multi-disciplinary working relate also to partnership working. Whilst this is within a category non-specific to CPTED, it could also be argued that this issue is only so prominent due to the nature of CPTED and its inherent reliance on partnership working across public and private organisations; all of which have conflicting agendas and priorities. Nevertheless, without further analysis, its specificity to CPTED could not be confirmed.

OpenPlan and DOCG had 100% of barriers within this general category which reflected *poor partnership working and information sharing*. According to OpenPlan, a large proportion of these barriers were due to lack of effective partnerships with expert knowledge on the physical social conditions influencing crime in the area. It seemed that the guidance offered by CPDA's was

inadequate for what this organisation was trying to achieve which was predominantly a sustainable, cohesive environment. Other partnership issues related to the responsibility of maintenance with regards to silos of people working together with little communication. This is considered to impact upon the perspective of stakeholders and the lack of understanding as to the impact of particular interventions on broader aspects of crime and the quality of life. P1M Town Planner, argued that what is lacking was a comprehensive integrated approach to crime prevention in the built environment which would ultimately improve communication, collaboration, budget allocation and sustainability.

TCPD highlight that Trinidad lacks government organisations to carry out vital roles which would help sustain CPTED efforts. According to P12F Town Planner, there are no organisations which carry out public maintenance which therefore relies on affluent communities to pay for private groundsmen. Police are also identified as inadequate organisations to help restore public confidence in the reporting of crimes. Personal communication with Trinidad Police Service (See Appendix F) confirmed corruption and high gang related violence is believed to impact the likelihood of residents reporting disturbances or suspicious behaviour. Other issues highlighted by TCPD relate to the gap between central and local government. As an organisation TCPD consider themselves to be removed from local government organisations with no systems in place to enable collaboration and information sharing. Sustainable CPTED needs a local focus and relies on local authorities and community representatives. As an organisation that controls the planning and design of the environment, the current system does not allow for sustainable governance to coordinate crime prevention efforts to agencies involved in the planning and design of new or existing environments.

DOCG also has 100% of barriers within this category which relate to partnership working and information sharing. Participants highlighted that within some police forces they have a formalised training system for crime prevention which ensures that tasks are delegated to individual people (P7M CPDA). They express that such system sustains expert knowledge but also depends on effective communication across the force. Participants suggested that integration of crime prevention principles into sustainable development policy would help integrate built environment professions with crime

prevention experts through recognition of mutual benefits; and take part in training which would help disseminate knowledge to other stakeholders in the planning process (P8M CPDA).

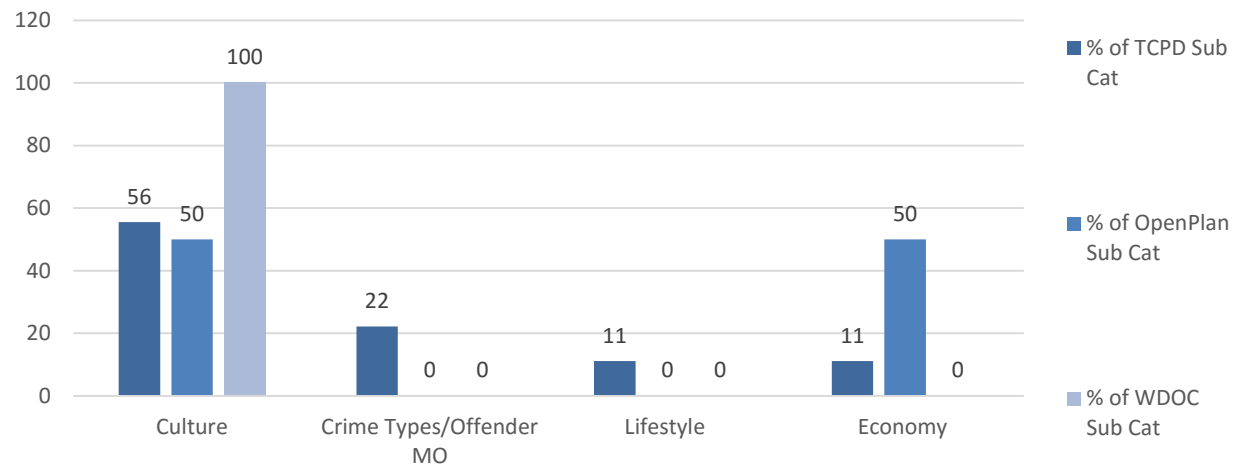
The remaining sub categories within conflicts in multi-disciplinary working are conflicts of power and time; both of which were identified by TCPD. ***Conflict of power*** is a prominent issue within TCPD and the wider Trinidad Government. Whilst TCPD are recognised as the controlling body for planning permission in Trinidad, as previously discussed, political loopholes mean that their power is overruled by other bodies such as the Advisory Town Planning Panel (ATTP) and private developers. Participants argue that even once planning advice has been given by TCPD, their recommendations are rarely taken on board. This can either result in illegal developments; which rarely get prosecuted, or that the applicant appeals to the ATTP who revise the application without consideration of expert or researched knowledge by TCPD (P12F Town Planner). The ATTP often then approves the application without consultation with TCPD. This kind of practice allows developers to control planning practice through the ATTP, both of which have limited knowledge of broader statutory or non-statutory design principles.

With regards to ***time*** TCPD highlighted that they are hugely understaffed in terms of the volume of planning applications which need considered on a daily basis. This therefore restricts TCPD from considering the wider social impact which is not written into planning legislation and therefore planners only have time for standardised planning control.

10.3.2.4: Conflicts specific to area context

Conflicts specific to the area context reflect barriers to communication and application which are a direct consequence of the context of the environment in question. Within this category there were four sub categories, all with low frequencies (See Chart 10.6)

Chart 10.6: Conflicts specific to area context per organisation



Within this category it is clear that **culture** is the most frequent barrier to implementation by all three organisations. Both DOCG and TCPD suggest that the media has a significant impact on the perceptions of local residents. DOCG suggest this relates to communities perception of crime prevention initiatives in which those that have not been so successful are excessively scrutinised by the media (P9F CPDA). This then makes local communities sceptical about crime prevention initiatives and has a knock on effect of their willingness to engage. TCPD highlight that the media increases fear in communities and that the nature of its content is particularly disturbing for readers. In such instances, there is an increased risk of communities becoming further detached from local authorities and their engagement with crime prevention initiatives is likely to reduce. Other culture barriers highlighted by TCPD relate to the nature of planning applications often being restricted to single dwellings which do not take into consideration land outside of the dwelling boundary. This is believed to restrict informal surveillance; another feature which is not regulated. The nature of crime in Trinidad was highlighted on a number of occasions as a barrier to effective CPTED application. Concepts such as image management and boundary definition are considered to be counter productive because it portrays affluence and something worth hiding. Participants suggested that crime is too excessive in Trinidad for CPTED to have a positive crime reduction effect (P1M Land Use Planner). OpenPlan confirmed that the culture of the planning industry does not effectively take into consideration influences of crime highlighting permeability as one of the main causes (P1M Town

Planner; P4M Urban Designer). Having deeply rooted cultural issues as a barrier to effective CPTED application is particularly problematic and less easy to overcome.

Economy was highlighted by TCPD and OpenPlan as a barrier which impacts the success of CPTED initiatives; particularly regarding transient populations and its impact on the level of community cohesion and engagement. P2F (Community Engagement Officer, OpenPlan) argued that due to economic patterns, urbanisation, professionals moving for work and students moving for university, the current population has become very transient which means people are less likely to know or invest time in getting to know their neighbours. In Trinidad particularly, TCPD highlighted that the gas industry which accounts for over 45% of the country's GDP (Ministry of Energy and Gas Industries 2015) has a significant impact on cheap fuel consumption and the volume of vehicles on the road. This is said to reduce the level of pedestrianisation and increase anonymity which has changed drastically over the lifetime of the participants.

As previously mentioned **crime types** in Trinidad are considered to be a big problem for CPTED initiatives in that preventative measures may not be as impactful on the nature of crime. Participants argued that there is resistance to CPTED principles due to fear of violent crimes (P1M Land Use Planner). What is not appreciated however is that CPTED principles are not necessarily crime type specific and reducing the number of abandoned roads and areas with poor surveillance is likely to have an effect on crime being committed in that area. Also there is no appreciation for the impact that reduction of volume crimes can have on the propensity for crime to escalate into more serious types of crime. This feedback suggests that the framework alone is insufficient to improve the conceptual knowledgebase of professional and a deeper more contextualised provision of information is required.

Lifestyle is the last remaining sub category which TCPD consider to impact the effectiveness of CPTED principles. Lifestyle relates to the different social norms with each community which may be governed by factors such as religion, nationality, deprivation etc. In this study, lifestyle of different socio economic was a prominent factor highlighted in the discussions. Participants believe that affluent communities have different social norms due to the level of safety they have within their

gated communities. It was argued that more affluent communities are safer due to financial investment in private security companies which more deprived neighbourhoods cannot afford (P10F Planning Intern). Such reliance on private security by affluent communities is said to make more deprived communities vulnerable since security features are not standardised in the planning process and if security is desired then it must be purchased by the homeowner.

10.4: Conclusion

This analysis set out to explore the transferability of the proposed CPTED framework in terms of both communication (understanding) and application (practical implementation). The results of the analysis highlighted no issues with the framework itself in terms of understanding the concepts, the underlying theory or the anticipated outcome of each principle. There was some reference to the more socially oriented concepts such as positive reinforcement which particularly identified that in practice there is limited consideration given to public perception or the impact that environmental aesthetics can have on fear of crime and use of space. These findings confirm that the framework was well received yet further clarity was sought regarding positive reinforcement which participants suggested could be done through the provision of social context information. Because there were no communication difficulties regarding the framework terminology or structure, the discussion around CPTED and the identification of barriers to successful implementation remained very general and particularly stressed the need for contextual information to inform decision making.

The majority of barriers identified related to practical implementation and highlighted issues which may prevent successful crime reduction effects. The results confirm that the proposed CPTED framework is transferable in terms of its communication and understanding by professionals. What is emphasised however is that whilst professionals do understand the principles of CPTED and the underlying theory which supports it, there is still little understanding as to how CPTED can be implemented in practice. This reinforces points made earlier in the thesis that there is an urgent requirement for local context information to help professionals make informed decisions for crime prevention in the built environment.

With regard to the application barriers identified, some context themes were extracted for further exploration in section three of the fieldwork which reports on the context information and its importance in CPTED planning. The themes particularly related to gas subsidisation and the impact on traffic congestion, pavement quality and the impact on pedestrianisation, economic heterogeneity and the impact on security, population transiency and social cohesion, police response and the impact on public confidence, private security services in affluent communities, political loopholes in the Government, public maintenance bodies, police corruption and Government accountability for crime prevention. All these themes are considered to cause barriers to positive crime reduction effects through CPTED planning.

The following section will explore the model for evaluating social context with local community residents in order to identify characteristics of the physical and social environment which impact on crime, fear and the overall quality of life.

Part D: Section 2

CHAPTER 11: Community Engagement

Chapter ten (Part D Section 1) successfully explored professionals understanding of the CPTED framework and identified barriers to both communication and application of the CPTED concepts. Results indicated that the language and theory of the proposed CPTED framework is well understood by professionals but understanding of practical implementation is still absent. Participants also proposed a number of contextual issues which they considered to restrict implementation of CPTED principles and reduce its impact on crime reduction/prevention.

Implementation barriers suggested that professionals in the built environment have limited knowledge as to the context of crime and social conditions which negatively impact upon the quality of life of citizens. It was also highlighted on a number of occasions that CPTED currently fails to integrate into planning practice and the broader remit of sustainable development.

This section of the fieldwork aimed to explore the indicators of socially sustainable communities proposed from chapter eight (model for evaluating social context) with local communities to identify characteristics of the physical and social environment which impact upon crime, fear and the overall quality of life of residents. Theories of crime and criminal motivation (both social and situational crime prevention) were synthesised with community responses in order to evaluate risk and potential barriers to positive crime reduction effects. The section asks *does the model for evaluating social context provide suitable characteristics for analysing risk to crime, fear and the overall quality of life?* (See figure 11.1).

This section of the research acts as a case study for using the social sustainability model to identify specific features of an environment and analyse social context in a community. Trinidad was selected as the main study area for a number of reasons discussed through the thesis (see chapter nine and ten). The timescale for fieldwork was approximately 8 months which required successful completion of professional focus groups pre context provision, community focus groups, data collection and

analysis, and post context provision professional focus groups. It was only realistic therefore to conduct focus groups with the local community in one area so that adequate time could be allocated to the collection of data in the built environment (See Appendix I). Using three geographic locations to explore professionals understanding and ability to apply CPTED was however vital for ensuring that the results were certain to reflect the impact that context provision had had on professionals and not just the learning ability of one group of professionals.

Figure 11.1: Fieldwork stages

Part D

Section 1 (Chapter ten): Are there barriers to the understanding and implementation of the proposed CPTED framework?

Section 2 (present chapter): Does the model for evaluating social context provide suitable characteristics for analysing risk to crime, fear and the overall quality of life?

Interim section (Methodology and Appendix I): Can the model for evaluating social context lead to useful context information on crime, fear and the quality of life?

Part E

Section 1(Chapter twelve): Does the provided social context information impact professionals' ability to make informed decisions for CPTED

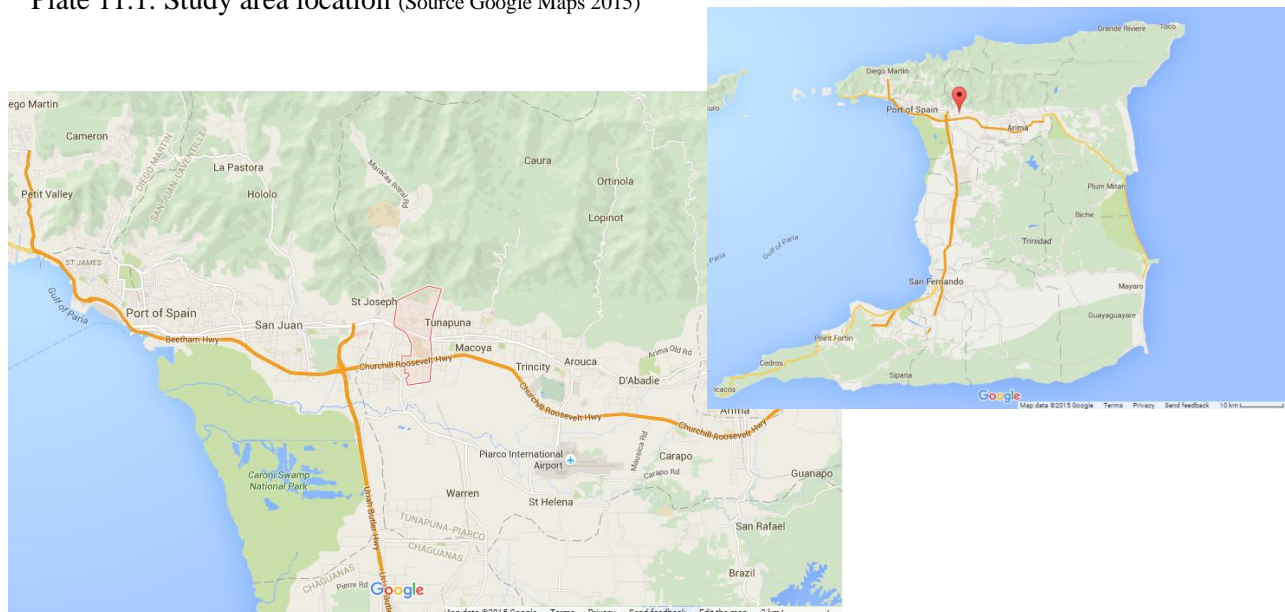
The role of this section is to identify the physical and social characteristics of the study area which communities consider to impact upon their feelings of safety and use of public space. These characteristics were explored through the collection and analysis of data (See Appendix I). The findings from the analysis were then used to provide context information to built environment professionals to analyse the impact this has on their understanding and ability to apply CPTED (See Chapter 12). The data obtained and analysed in Appendix I are not intended to measure crime risk as

part of the thesis but rather provide meaningful information regarding the context of crime and its relationship to design so that professionals can make informed decisions for CPTED planning.

11.1: Section 2 participants

This chapter reports on focus groups conducted with local communities which explored indicators of social sustainability and their impact on crime, fear and the overall quality of life. The participants used in this section of the research were local community residents from the study area of the Tunapuna/Piarco municipality of Trinidad, particularly in the region of St Augustine (See Plate 11.1)

Plate 11.1: Study area location (Source Google Maps 2015)



Three separate groups of participants were selected for analysis which covered a diverse range of community groups. The first group included 12 local community residents from the St Augustine/Curepe area who responded to an advert on social media. The second group included eight ladies from a local mosque who lived close to St Augustine. The third group included ten post graduate students from the University of the West Indies which is located in St Augustine. The variation of participants who engaged in this research is considered to be important for the integrity of the results by ensuring that the responses and subsequent data collected did not just reflect one community group but rather a general representation of the wider community.

The focus group strategy was replicated across the three individual groups and consisted of a range of questions used to explore the indicators of social sustainability presented in chapter eight. The discussion guide can be found in Appendix G. As discussed in chapter ten, it was important that the researcher did not influence participant responses in any way and therefore took a passive position in the focus group; acting only to maintain a focused discussion and to ensure the required level of detail was obtained.

Qualitative coding techniques were used in this section to categorise participant responses from conceptual themes into measurable data (See table 11.1).

Table 11.1: Coding categories for community responses.

Aspect	Indicator	Category	Feature
Positive/ Negative	Physical Infrastructure	Transport	Illegal taxis
			Traffic flow
			Parking facilities
			Accessibility of public transport
			Gas subsidisation
		Urban Form	Historic planning
			Land use
			Economic zones
			Vehicle and pedestrian movement
		Planning regulations	Licenses for commercial properties
		Commercial Industries	Business turnover
			Crime rates/opportunities
	Design	Maintenance	Design and maintenance of recreational facilities
		Layout	Cul-de sacs
			Physical race/class divide
		Sightlines	Visibility
		Walkability	Pavement quality
			Box drains

		Use of public space	Open spaces
			Free outdoor gym facilities
		Traffic congestion	Road conditions
	Tenure and Demographics	Social housing	Proximity between tenure classifications
			Housing options for low income communities
		Rental properties	Number of rental properties
			Population migration
		Demographics	Vulnerable groups
			Groups at risk of offending
		Immigration	Immigrants
		Race	Stereotypes
			Race of convicted criminals
			Race of general population
		Religion	Religion of convicted criminals
		Deprivation	Inequality
			Heterogeneity
	Safety	Regulatory control	Security controls/standards
			Regulation of squatter settlements
		Policing	Criminal conviction rate
	Inclusivity	Population density	Local population
			Local amenities
		History	Political and religious conflicts
	Sustainability	Politics	Government accountability
		Planning	Sustainable development
		Place making	Heritage
			Cultural activities
		Local government Initiatives	Sustainability of community initiatives
	Cohesion	Population turnover	Residency

		Race and class	Racial harmony Class differentiation
		Sense of community	Engagement
	Awareness	Vulnerable groups	Student population demographics
			Reliance on public transport
		Funding allocation	Government spending
		Media	Crime stories
	Agency involvement	Policing	Police beats
			Police response
			Offender rehabilitation
			Police branch accountability
			Regulation of squatters
			Police recruitment and training
			Police community relationships
		Security	Private security services
		Social Service Agencies	Social services
		International Support	International funding criteria
		Local community services	Community initiatives
	Preparedness	History	Disaster preparedness
		Child development	History of child development
	Governance	Funding	Funding sustainability
		Local government agencies	Environmental management and maintenance
			Management of recreational facilities
		Policing	Corruption
			Crime control
		Employment accountability	Employment rates
		Ministries	Corruption
			Political loopholes

		Accountability	Crime Prevention
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The qualitative coding categories were entirely emergent in nature, featuring only categories that derived from the content of communication with community representatives. Some categories may seem to be repetitive but the context of the categories differs between each indicator and therefore generated varied data. Analysis sheets for coding communication from the focus groups and a focus group pilot study can be found in Appendix H.

Each of the sustainability indicators were explored individually and participants were asked to consider its meaning and how, or if, it impacted on their quality of life, perception and fear of crime. Each piece of information provided was considered against theories of crime and criminal motivation to highlight its position within the CPTED framework as either context information for CPTED decision making or as potential barriers to effective CPTED implementation. Table 11.2 sets out the impact weighting codes which can be found in a table for each set of data.

Table 11.2: weighting of data importance

	High	Medium	Low
Impact	a= very important and very impactful to informed decision making	b= not directly related to CPTED planning but still useful information to identify potential barriers	c= somewhat important but does not directly influence CPTED planning

Only data with an impact weighting of ‘a’ would be considered vital for further exploration. Other data would be considered if it added value to the information produced or if a barrier to effective CPTED intervention was identified.

11.2: Results

The following section will report on each indicator of social sustainability identified in chapter eight and the characteristics identified by community participants.

11.2.1: Physical Infrastructure

Discussions with community participants regarding physical infrastructure in St Augustine and the impact on residents fear and perception of crime and overall quality of life revealed four individual categories for exploration. **Transport** was highlighted by both the St Augustine community and the UWI community as a factor which negatively impacted upon their feelings of safety in the built environment. This predominantly related to the density of vehicular traffic on the roads, which was perceived by residents to be a consequence of low fuel prices and poor parking facilities. Residents felt that traffic problems caused frustration on the roads and cars often came to a standstill, putting passengers at risk of attack by pedestrians. With regards to parking facilities, participants felt that many of the commercial premises around the area had inadequate parking which they perceived to be the cause of vehicles parking in obstructive places, also contributing to congestion problems. Other participants highlighted that private taxi services were dangerous due to illegal taxi drivers with criminal convictions and the lack of regulation for license issuing. Participants perceived that due to poor public transport services, people are forced to use private hired taxis, otherwise known as ‘PH’ taxis in Trinidad. One lady commented that *“that is the extreme we are drove to because of such poor public infrastructure and access to services; women can be put at serious risk”* (Student PIF). All three instances listed here are a good example of Routine Activity Theory (RAT) (Cohen & Felson 1979) and Rational Choice Theory (RCT) (Cornish & Clarke 1985) and instances where potential offenders may cross paths with potential victims. Table 11.3 sets out data required for exploration of these issues, indicating its position as CPTED context information or a potential barrier to implementation and an indication as to the impact of the data on informed decision making for CPTED

Table 11.3: Data for analysing transport issues

Category	Data	Position	Weighting
Illegal taxis	Taxi licensing	Potential barrier through unregulated taxi licensing	b
	Average daily taxis on Eastern Main Road(EMR)	RAT: Information on potential offenders	a
	Crimes reported against taxi drivers	RAT: Information on extent of problem	c
	Physical condition of main taxi routes	RAT: Information on potential surveillance obstruction and lack of guardianship in abandoned areas	a
Traffic flow	Average taxis entering St Augustine border via EMR	RAT: Information on potential offenders	a
Parking facilities	Parking facilities per amenity	RAT: Information on conditions influencing traffic problems	c
	Cars parked at the side of the road	RAT: Information on conditions influencing traffic problems	c
	Average speed of cars in hotspot areas	RAT: Information on conditions influencing traffic problems	c
Accessibility of public transport	Frequency of public transport (Maxi Taxis)	Potential barrier if public transport is not regulated	c
	Location and distance between bus stops	RAT: Information on conditions influencing risk to public transport users	a
	Crimes reported on public transport	RAT: Information on extent of problem	c
	Car security features	RCT: Information on opportunity for car theft	a
Gas subsidisation	Gas prices	Potential barrier to pedestrianisation and capable guardianship if gas prices remain low and vehicle ownership rises or remains high	b

Urban Form was identified as an impacting factor to the way in which communities use public space within the St Augustine Education City. This predominantly related to remnants of historic planning which is perceived to have resulted in excessive permeability of all road types therefore providing easy access and egress for opportunistic criminals; this illustrates Rational Choice Theory (RCT) and the ease of access and egress for potential offenders. Land use in this area is considered to be

problematic in the way in which commercial and residential zones cluster around road intersections which is perceived to cause conflict of use, increase the risk of acquisitive crime and increased the number of anonymous users; suitably evidencing Routine Activity Theory (RAT) in the routine daily activities of potential victims and offenders. This is also considered to impact upon vehicle congestion and increase risk to pedestrians which subsequently causes them to retract from public space and avoid these areas on foot. Participants felt that there was also an issue regarding the geographic proximity of economic zones since affluent communities are sandwiched between lower income communities; they believe this puts them at risk of becoming victims of robbery or burglary, again providing an example of RAT (Cohen and Felson 1979). Table 11.4 sets out data required for exploration of these issues and the supporting theoretical and impact evaluation.

Table 11.4: data for analysing urban form

Category	Data	Position	Weighting
Historic Planning	Number of pedestrians (eyes on the street)	RAT: factor influencing surveillance	a
	Permeability of streets	RCT: factor influencing opportunity for escape	a
Land use	Density of businesses per square meter	RAT: factor influencing routine activities	a
	Layout and physical condition of businesses (crime opportunities)	RCT: information on design and maintenance which may provide opportunities for crime	a
	Crime Hotspots	RAT: Information on most at risk areas	a
Economic zones	Zone juxtaposition (residential/commercial/recreational)	RAT: Information on potential vehicle and pedestrian routes and areas most at risk of victim and offenders crossing paths	a
Vehicle and pedestrian movement	Number of vehicles and pedestrians in one area	RAT: Information on the extent of the risk to victims and offenders coming into contact	c
	Pedestrian only zones	RAT: Information on areas most/least at risk of conflicting use/functions	a

	Vehicle only zones	RAT: Information on areas most/least at risk of conflicting use/functions	a
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The third aspect of physical infrastructure identified by participants as problematic to crime, fear and the quality of life were **planning regulations**. This related to regulation of commercial licensing in that participants felt that commercial premises were clustered in zones that have developed in residential areas with inadequate infrastructure to support their intended function. Participants believe that *“these are the places you find different classes of people; the people in the Mercedes with 200,000\$ in their pocket... are mixing with the pauper on the street” (Shop Owner P3M)*. Whilst this is the expressed opinion of a few individuals, it does provide an example of RAT (Cohen and Felson 1979) and the potential for victims and offenders to come into contact. According to participants there is little regulation as to where commercial premises are situated which is believed to result in unsafe environments and a mixture of both victims and offenders.

Table 11.5 sets out data required for exploration of these issues and the supporting theoretical and impact evaluation

Table 11.5: data for analysing planning regulations

Category	Data	Position	Weighting
Licenses for commercial properties	Regulations for commercial licensing	RAT: Information on risk to increased transient population and mixed use	c
	Security Assessments	RCT: Information on current regulations for security for prevention of opportunistic offences	c
	Security Standards	RCT: Information on current regulations for security for prevention of opportunistic offences	c
	Crime impact assessments	RCT: Information on current practice for assessing crime risk in new developments	c

The **commercial industry** was frequently highlighted by participants as a factor which negatively impacts the perception and use of the local environment. Central to this was the risk posed to business owners and the risk of kidnapping for ransom. Participants commented that *“If you own a business in Trinidad your kids now become a target” (Primary School Teacher PM2)*. In this respect, it was therefore important to explore business turn over and rates of kidnap in the area to identify the extent of this risk to St Augustine; this illustrates RCT (Cornish & Clarke 1985) and the potential reward of proceeding with a criminal act.

Table 11.6 sets out data required for exploration of these issues and the supporting theoretical and impact evaluation

Table 11.6: data for analysing the commercial industry

Category	Data	Position	Weighting
Business success	Annual turnover	RCT: Information as to the reward to offenders	c
Crime	Kidnap for ransom	RCT: Indicates the extent of the problem	c

11.2.2: Design

Design was the second indicator of social sustainability used to explore social context within the St Augustine Education City. Participants highlighted six categories which they considered to be impactful to the way in which they perceived and used public space. **Maintenance** was highlighted on a number of occasions concerning the abandonment of recreational facilities and the impact this has on surveillance and opportunities for loitering and anti-social behaviour. Participants perceived facilities available to the public to be poorly maintained with poor surveillance and lighting and in close proximity to high crime areas. They believed this reduces the use of facilities and leads to areas becoming abandoned, particularly after dark, and provides an example of RCT (Cohen & Felson 1979) and Broken Windows Theory (BWT) (Wilson & Kelling 1982) through reduced effort and risk (surveillance).

Table 11.7 sets out data required for exploration of these issues and the supporting theoretical and impact evaluation

Table 11.7: data for analysing maintenance

Category	Data	Position	Weighting
Design and maintenance of recreational facilities	Physical conditions of access routes	BWT: Information on risk to negative social stigma and lack of social control	a
	Crime hotspots and proximity to recreational grounds	RAT: Information on risk to offenders and victims coming into contact	a
	Maintenance of recreational facilities	BWT: Information on risk to negative social stigma and lack of social control	a
	Use of recreational facilities	RCT: Information on current levels guardianship	c

The **Layout** of the physical environment was considered an important feature of design which affected residents' feelings of safety and the quality of life in St Augustine. Participants highlighted that the main arterial road (EMR) which runs along the east-west corridor signifies a physical race/class divide that is perceived to be evident in the condition of residential dwellings and the economic status of community groups. They believe this to be problematic due to class conflicts and segregation between the two groups which examples the routine activities of victims and offenders crossing paths and Strain Theory (ST) (Merton 1957) with deprived communities being in close proximity to affluent communities.

Participants also highlighted that the design of their immediate residential location was important for cohesion with other residents in the area. Some residents highlighted more affluent communities that have cul-de-sac layouts have a stronger sense of community and facilitate the identification of unrecognised people coming into the area; this examples routine activity theory and levels of guardianship. Others perceived areas with excessive permeability to increase the number of strangers passing through their neighbourhood which results in residents becoming isolated from one another and not engaging with neighbours; also allowing suspicious behaviour to go unnoticed. One

participant argued that “*many of our communities are structured in a way that we don’t need to pass our neighbours*” and that “*people lead much more insular lives*” (Student P1F). This also provides an example of RAT (Cohen & Felson 1979) and the potential for victims and offenders crossing paths (See table 11.8).

Table 11.8: data for analysing layout

Category	Data	Position	Weighting
Cul-de sacs	Cul de sac design	RAT: Information on level of permeability and opportunity for surveillance	a
	Access and Egress	RCT: Information on effort required and opportunities for offending	a
	Residential layout	RCT/RAT: Information on current risk to surveillance and access/egress	a
Physical race/class divide	Design conditions north and south of the EMR	ST/BWT: Provides indicators of social stigma	a
	Crime hotspot comparison north and south of the EMR	Information to indicate current impact on crime	c

Sightlines were considered an important aspect of environmental design in St Augustine and the perceived impact this has on residents’ feelings of safety and impact on crime. Participants highlighted that lighting and visibility of the majority of areas in St Augustine were inadequate for facial recognition and feelings of safety. Students in particular highlighted that “*there is not much lighting outside campus, or anywhere in fact; I hate this because I always feel vulnerable at night. I sometimes miss class because of this as it’s not worth the risk when there are so many bad people on the streets*” (Student P2M). Other non-student participants argued that “*you really have to be careful where you walk so you not in a dark place or somewhere that people cannot see you*” (Retired P3F). This provides an example of RAT (Cohen & Felson 1979) and obstruction of surveillance and guardianship opportunities (See table 11.9).

Table 11.9: data for analysing sightlines

Category	Data	Position	Weighting
Visibility	Lighting	RAT: Information on current surveillance restrictions and risk to victimisation if victims and offenders paths intersect	a
	Sightlines to the public realm	RAT: Information on current surveillance restrictions and risk to victimisation if victims and offenders paths intersect	a
	Public use of space after dark	RAT: Information on current surveillance restrictions and risk to victimisation if victims and offenders paths intersect	a
	Dead spaces	BWT/ RAT: Information on current surveillance restrictions and risk to victimisation if victims and offenders paths intersect and the impact that abandoned spaces can have on the escalation of crime	a

Walkability was an issue raised on many occasions by residents in St Augustine, particularly regarding the quality of pavements. Pavement quality in general was perceived to affect the ability to walk in public spaces by many participants, particularly with regard to the width of pavements and quality of pavement materials. Participants highlighted that *“the sidewalks are not maintained, they have missing manhole covers, they are very narrow and we have dirty drains with a strong stench of urine and sewers. That area we are looking at is a walkable distance but I would never walk there”* (Lecturer P7F). Other features of pavement quality considered to be significant are open box drains. Both residents and police believe that these create hiding places for criminals during residential burglaries as well as for opportunistic attacks on pedestrians. These issues provide a good example of BWT (Wilson & Kelling 1982) and RAT (Cohen & Felson 1979) and that the condition of the environment can impact the way in which people use it and the subsequent behaviour that can occur when areas become abandoned (see table 11.10).

Table 11.10: data for analysing walkability

Category	Data	Position	Weighting
Pavement quality	Pavement materials	BWT: Factor influencing reduced walkability and subsequent guardianship	a
	Pavement width	BWT: Factor influencing reduced walkability and subsequent guardianship	a
	Holes in pavement	BWT: Factor influencing reduced walkability and subsequent guardianship	a
	Pedestrian use of pavements	Information on impact of poor pavement quality	c
Box Drains	Box drain width	RAT/BWT: Factor influencing reduced walkability and subsequent guardianship and opportunities for offending	a
	Box drain depth	RAT/BWT: Factor influencing opportunities for offending	a
	Reported incidents of pedestrians and vehicles	Information on extent of problem	c

Use of public space is a related factor to many of the issues mentioned by residents but also considered to be a stand-alone issue. Participants argued that there is limited open space available for local community use which is perceived to restrict community engagement, ownership and local attachment. Residents highlighted that they “*need more places which are safe, places where we can walk and run*” (*Cleaner P2F*). Outdoor gym facilities which are free to the public were identified as a positive feature of the environment which brings people together for a common purpose however they are limited around the St Augustine area. This is a good example of BWT (Wilson & Kelling 1982) and RAT (Cohen & Felson 1979) in that specific features are required to encourage use of space and ownership and sightlines are important for surveillance (see table 11.11)

Table 11.11: data for analysing use of public space

Category	Data	Position	Weighting
Open Spaces	Recreational grounds	RAT: Information on facilities provided to encourage use and ownership of public space	a

	Open green spaces	RAT: Information on facilities provided to encourage use and ownership of public space	a
	Maintenance of open spaces	BWT: Information on risk to open spaces becoming derelict or creating opportunities for crime	a
	Public use of open space	Information on impact of unmaintained spaces on public use	c
Outdoor gym facilities	Count of outdoor gym facilities	RAT: Information on facilities provided to encourage use and ownership of public space	a
	Sightlines at outdoor gym facilities	RAT: Information on opportunities for guardianship and ownership in outdoor facilities	a

Traffic congestion has already been highlighted in relation to physical infrastructure; however, a perception of residents also felt that the design of the environment in St Augustine contributed to traffic congestion, particularly regarding the width of roads. The width of roads in the study area are considered to be too narrow to accommodate dense traffic flow which is perceived to result in drivers becoming at risk of attack by pedestrians and pedestrians at risk of vehicle collision. Participants also felt that due to narrow pavements, sightlines were poor at junctions which can lead to vehicle/pedestrian conflict. This is a good example of the routine activity theory of offenders potentially crossing paths with victims (see table 11.12).

Table 11.12: data for analysing traffic congestion

Category	Data	Position	Weighting
Road conditions	Road width	RAT: Information on factors contributing to conflict on the road	a
	Sightlines at junctions	RAT: Information on factors contributing to conflict on the road	a
	Average speed of traffic	RAT: Information on factors contributing to conflict on the road	a
	Number of car accidents	Indication to extent of the problem	c
	Number of attacks	Indication to extent of the problem	c

11.2.3: Tenure and demographics

Tenure as an indicator of social sustainability highlighted **social housing** as a factor which impacted upon participants' perception of safety. It was suggested that social housing projects have been relocated from high crime areas into St Augustine which increased fear amongst residents. One participant commented *"they moved people between La Hocketa and Malone and people were deadly scared because the people came from Laventille"* (Mechanic P6M). Laventille is suggested to be notorious for high crime rates and the relocation of some of its lower income residents into St Augustine was believed to negatively impact upon the local community. This relates to ST (Merton 1957) and the routine activity theory (See Cohen & Felson 1979) of offenders potentially crossing paths with victims (see table 11.13).

Table 11.13: data for analysing social housing

Category	Data	Position	Weighting
Proximity between tenure classifications	Housing tenure	RAT/ ST: Information on risk to victims and offenders crossing paths and economic strain amongst low income communities	a
	Crime hotspots	Evidence of impact of mixed tenure on crime opportunities	c
Housing options for low income communities	Social housing providers	Information on social housing locations	c

Rented properties were considered another important feature in relation to the impact of tenure on crime, fear and the quality of life. According to residents, St Augustine has a high rental market due to the number of students in the area. This is believed to increase migration and population turnover which in turn reduces the level of cohesion and ownership. One participant highlighted that *"now you have a lot more people walking the streets during the night and during the day and this creates a bigger opportunity for criminals. It is far too overpopulated by people who don't have knowledge of*

the area and nobody knows each other anymore” (Teacher P2M). This issue reflects the routine activities of victims and offenders and the possibility of their paths intersecting (see table 11.14).

Table 11.14: data for analysing rental properties

Category	Data	Position	Weighting
Rental properties	Number of registered rental properties	RAT: Information indicating the number of temporary residents	c
	Migration to and from St Augustine	RAT: Information indicating the number of temporary residents	c

Vulnerable groups were identified as an important factor that affected participants’ fear and perception of crime. Communities felt that there were a number of vulnerable groups in the St Augustine community, particularly students. One participant pointed out that *“the student population in this community are a bunch of naïve people who really don’t know or care about the past 20-30 years or take any interest in the socio economic and socio political development of the country... they are very unaware of the risks posed to them” (Sales consultant, P5F).* Having a large student population also captures an age bracket most at risk of offending (15-23) (See Loeber & Farrington 2014). This is an example of RAT (Cohen & Felson 1979) and the number of potential victims in the area (see table 11.15).

Table 11.15: data for analysing vulnerable groups

Category	Data	Position	Weighting
Vulnerable groups	Students	RAT: Information indicating number potential victims	c
	Elderly	RAT: Information indicating number potential victims	c
	Disabled	RAT: Information indicating number potential victims	c
	Youths	RAT: Information indicating number potential victims	c
	Females	RAT: Information indicating number potential victims	c
Groups at risk of offending	Deprivation	RAT: Information indicating number of potential offenders	c

	Age	RAT: Information indicating number of potential victims and offenders	c
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Immigration was considered by participants to be impactful on fear and risk to crime in St Augustine and Trinidad as a whole. Participants highlighted that deportation of major international criminals back to Trinidad is having a significant impact on the nature of crime in the region. The current protocol for criminal conviction in the US and other parts of the world is that the convicted individual must return to their home country regardless of the length of residency. Participants feel that *“a lot of major crime that is happening in Trinidad is by ex-criminals from the US who are very well seasoned in US type crime and when they come to Trinidad they breed a group of kids into understanding the gang cultures... they become the new teachers and the mentors for a new wave of criminals in Trinidad”* (Teacher P2M). This information relates to routine activity theory and the potential for victim and offender paths to intersect (see table 11.16).

Table 11.16: data for analysing immigration

Category	Data	Position	Weighting
Immigrants	Nationality of convicted offenders	Confirmation of more criminogenic racial groups	c
	Police and security partnerships with other Caribbean islands	Informs professionals of current management in place. Potential barrier if not effective	c
	Police and security partnerships with other agencies	Informs professionals of current management in place. Potential barrier if not effective	c
	Criminal deportees	Informs the extent of risk	c

Crime in Trinidad is considered by participants to be of great public concern. Respondents feel that they are well informed by the media about events which take place on a daily basis. Many residents feel that **race** is an influencing factor as to the level of crime in a particular geographic area and

perceive crime to be predominantly carried out by Black African males. One resident who was black African herself pointed out that *“there has always been crime in these hotspots and if you look it is basically the African areas.”* (Shop Owner P1F) This mildly relates to routine activity theory in that if this assumption is true, race distribution in Trinidad could be a reflection of the risk of potential offenders in the community (see table 11.17).

Table 11.17: data for analysing race

Category	Data	Position	Weighting
Stereotypes	Media stories of racial discrimination	Information on current extent of racial stereotype	c
Race of convicted offenders	Race of prisoners	Confirmation of stereotype	c
	Ethnic minority community hotspots	RAT: Information on location of potential offenders	c
	Crime hotspots	RAT: Information may reflect stereotype	c
General race	Race of general population	RAT: Information on number of potential offenders	c

Community participants highlighted **religion** as a factor assumed to prevent deviant behaviour. It was suggested that *“religion helps keep peoples character in tune, it helps keep you focused and abiding by certain rules and ways of life especially when they are children. No religion teaches bad things”* (Cleaner P2F). Whilst this may be a biased opinion due to the religion of the participant (See analysis sheets in Appendix H) exploration of this feature was still considered worthy of exploration (see table 11.18).

Table 11.18: data for analysing religion

Category	Data	Position	Weighting
Religion of convicted offenders	Religion of prisoners	Confirmation of stereotype	c
	Religion of general population	RAT: Information on risk to offending	c

Deprivation was the final category highlighted within the tenure and demographics indicator.

Residents felt that *“there is no thought put into the proximity of settlements. If you have a private development, you are most likely going to find low income developments near-by where they are more apt to criminal behaviour”* (Student P5F). This is perceived to significantly increase risks to crime and fear of crime within residential areas and something which considerably impacts the way in which residents use public space. This reflects RAT (Cohen & Felson 1979) and ST (Merton 1957) in the economic strain of deprived communities and routine activities of potential victims and offenders (see table 11.19).

Table 11.19: data for analysing deprivation

Category	Data	Position	Weighting
Inequality	Deprivation	RAT/ST: Information on risk to offending	c
	Acquisitive crime	Extent of problem	c
Heterogeneity	Geographic deprivation	Information on location of risk	c

11.2.4: Safety

As an indicator of social sustainability, discussions of safety highlighted **regulatory control** as an important factor relating to safety, particularly with regard to security controls. Participants perceived a lack of regulation over recreational facilities allow a change of function in hours after dark. It was highlighted that children parks around St Augustine are *“known for congregations of socially displaced persons and deportees”* (Student P5M). With no measures in place to accommodate such people or to manage the public area, this issue may restrict the intended use of what are already limited facilities in St Augustine (see table 11.20).

Table 11.20: data for analysing regulatory control

Category	Data	Position	Weighting
Planning and Security control/Standards	Planning legislation	Potential barrier if poor regulation but TCPD have the power to change legislation	b
	Crime prevention legislation	Potential barrier if poor regulation but TCPD have the power to change legislation	b
Regulation of squatter settlements	Policing of squatter settlements	Potential barrier if policing practice is poor	b
	Crime hotspots	Information on location of risk	c

Policing was highlighted by participants to be inadequate in convicting offenders which put residents at risk of attack. It was argued that *“a lot of crime is not detected so criminals are left walking the streets; this is what makes us scared”* (Mosque volunteer P5F). Criminal conviction is an important factor for restoring public confidence in the police as well as increasing feelings of safety (see table 11.21).

Table 11.21: data for analysing policing

Category	Data	Position	Weighting
Criminal conviction rate	Detection rate	Potential barrier if policing practice is poor	b
	Reported and resolved crimes	Potential barrier if policing practice is poor	b
	Dark figure of crime	Information on level of unreported/ undetected crime	b

11.2.5: Inclusivity

Inclusivity was identified as an indicator of socially sustainable communities in chapter eight.

Participants highlighted both population density and history as factors which impact upon the inclusivity of communities. Participants highlighted that **population density** was too high in Trinidad,

and particularly in the study area of St Augustine. It was suggested that overpopulated spaces cause weak social ties and crime opportunities. Amenities and access to services within St Augustine were considered to be the primary factor for the area becoming over populated. St Augustine is mixed use land, containing schools, churches, shops, bars, restaurants, banks, supermarkets etc. Participants suggest these features increase the transient daily population into St Augustine making it over populated and increasing fear, anonymity and opportunities for crime. These issues are related to of the routine activities of offenders and victims crossing paths (see table 11.22)

Table 11.22: data for analysing population density

Category	Data	Position	Weighting
Population	Transient daily population	RAT: Information on number of potential victims and offenders	c
	Residential population	RAT: Information on number of potential victims and offenders	c
Local amenities	Shops	RAT: Nodes influencing routine activities	c
	Bars	RAT: Nodes influencing routine activities	c
	Restaurants	RAT: Nodes influencing routine activities	c
	Schools	RAT: Nodes influencing routine activities	c

History was also identified as a serious factor contributing to social ties within the community. It was argued that communities are “*just about 100% unable to participate in the way this community is run*” (*Mechanic P6M*) and that this is a result of the polarisation which is perceived to have emanated from the history of political and religious conflicts over the years. This issue reflects SCT (Hirschi 1969) in that polarisation will weaken social norms and values and increase the propensity to commit deviant acts (see table 11.23).

Table 11.23: data for analysing history

Category	Data	Position	Weighting
Political and religious conflicts	News stories of political and religious unrest	SCT: Indication of extent of polarisation	c

11.2.6: Sustainability

Whilst sustainability is obviously a natural component of socially sustainable communities, it was considered important to explore the topic with local residents who may not be aware of the way in which the other indicators discussed relate to sustainability. The topic was of great interest to community participants who highlighted four individual categories impactful to their quality of life and fear in the community.

Politics was considered an important category which participants perceive to negatively impact upon the sustainability of communities. It was argued that “*one of the main issues in Trinidad is the lack of accountability and lack of responsibility*” and that “*promises never materialise*”. The accountability of the Government was perceived to be a major part of this in that “*It has reached the point now where there are so many issues which have never been resolved that we live in a culture now and this culture has slowly been ingrained in us that nothing at all is going to happen so nobody bothers anymore*” (Teacher P2M). Participants suggest this impact on many aspects of sustainability, including community engagement, ownership and community control (see table 11.24).

Table 11.24: data for analysing politics

Category	Data	Position	Weighting
Government accountability	Government manifestos	Potential barrier if government is not accountable	b
	Government expenditure on community concerns	Potential barrier if low investment in community	b

Participants highlighted that the current **planning process** in Trinidad is not sustainable which ultimately impacts upon the quality of life of communities. Participants suggest that due to a lack of

planning, *“there comes a point where the structures stop working for you and start working against you... there is a lack of design innovation and adaptivity. It reaches a peak of where it could work then it falls apart and that is what we are witnessing right now”* (Business owner P1M). Participants perceive Trinidad to be in a current state of social and physical decline due to unsustainable planning which ultimately influences the way in which communities live, plan and build for the future. These issues reflect BWT (Wilson & Kelling 1982) and RAT (Cohen & Felson 1979) if areas decline and become unmaintained and abandoned (see table 11.25)

Table 11.25: data for analysing the planning process

Category	Data	Position	Weighting
Sustainable development	Sustainable development practice	Potential barrier If planning is not sustainable. TCPD have power to regulate this	a
	Abandoned buildings	RAT/BWT: Potential opportunities for crime	a

Place making was identified by community participants as a factor impacting the sustainability of communities. Students of the University of the West Indies commented on the lack of heritage in and surrounding the university campus for place making and local attachment. They argued that *“on the fringes of the campus there are no activities, no people there at all. We don’t want to walk there; it is not a nice place to socialise”* (Student P3F). Participants highlighted that there is wasted talent in the region, no sense of retaining heritage or promoting the skills and talent of younger generations. Participants perceive this to reduce the sustainability of the community since there is no sense of ownership or local attachment. This reflects RAT in the lack of capable guardianship during peoples’ routine activities; also Social Bond Theory (SBT) regarding local attachment and a sense of belonging through shared institutions (see Hirschi 1969) (see table 11.26).

Table 11.26: data for analysing place making

Category	Data	Position	Weighting
Heritage	Historic landmarks	RAT/SBT: Factors influencing guardianship and ownership	c
	Historic architecture	RAT/SBT: Factors influencing guardianship and ownership	c
	Cultural organisations	RAT/SBT: Factors influencing guardianship and ownership	c
Cultural activities	Local talent groups	RAT/SBT: Factors influencing guardianship and ownership	c
	Public exhibitions	RAT/SBT: Factors influencing guardianship and ownership	c

With regards to the sustainability of communities, participants suggested that **local Government initiatives** have no longevity due to poor planning, measurement and evaluation as well as a significant lack of community consultation. Participants highlighted that *“when the government do step up to the plate there is a lack of planning and thought going into the regime. They don’t think about what end result is needed”* (Administrator P4F) (see table 11.27).

Table 11.27: data for analysing Government initiatives

Category	Data	Position	Weighting
Sustainability of community initiatives	Targets, Outcomes and Evaluations	Potential barriers if initiatives are not sustainable	b

11.2.7: Cohesion

Chapter eight highlighted community cohesion as an indicator of social sustainability suggesting cohesion is needed to mobilise and empower citizens to actively engage in decision making and community control. **Population turnover** was identified by residents as a factor which inhibits

community cohesion. Participants suggested this was because “*you can’t get embedded in your community and get to know your neighbour... you come here, you go to work/university, you live here two or three years, you move on. Nobody settles here*” (Business Owner P1M, Teacher P2M). High population turnover is therefore considered to negatively affect the strength of social ties amongst community members which is suggested by participants to impact the level of ownership and collective community control. This reflects routine activities of victims and offenders and also SCT (Hirschi 1969) in the relationships and local attachment of the community (See table 11.28)

Table 11.28: data for analysing Population turnover

Category	Data	Position	Weighting
Residency	Number of rented properties	RAT/SCT: Information on likelihood of high population turnover	c
	Migration and out migration	RAT/SCT: Indication of population turnover	c

Race and class were considered by participants to negatively impact community cohesion in Trinidad. Whilst it was suggested that Trinidad is a very tolerant society with regards to racial diversity and socio economic status, one participant highlighted that this is often a false image portrayed to the outside world and that internally; Trinidad is blighted with tensions and disharmony. With regards to stereotypes and polarisation, one resident commented that “*The more I think about it I realise we really not a country anymore*” (Caretaker P7M). This issue relates to ST (Merton 1957) in the economic strain of deprived communities as well as SDT (Shaw & McKay 1942) in that polarisation and segregation will weaken social bonds and reduce social control (see table 11.29).

Table 11.29: data for analysing race and class

Category	Data	Position	Weighting
Racial harmony	History of racial conflicts	Gives an indication of polarisation	c

Class	Socio economic status	Gives an indication of polarisation and potential motivation to offend	c
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Sense of community was highlighted as a category related to sustainability. It is believed that specific amenities which adopt scheduled routines bring small numbers of trustworthy individuals into residential areas which increase community cohesion and eyes on the street. This relates to SCT (Hirschi 1969) and RAT (Cohen & Felson 1979) in that increased legitimate use would increase community control, social networks and capable guardians (see table 11.30).

Table 11.30: data for analysing a sense of community

Category	Data	Position	Weighting
Engagement	Schools	Information on factors increasing routine guardianship and community cohesion	c
	Community centres	Information on factors increasing routine guardianship and community cohesion	c
	Religious buildings	Information on factors increasing routine guardianship and community cohesion	c
	Sport facilities	Information on factors increasing routine guardianship and community cohesion	c

11.2.8: Awareness

Results from chapter eight suggested that awareness of problems was vital for sustainable communities to ensure that they could be prepared for future issues and learn from past mistakes. As previously discussed, students are perceived by participants to be a **vulnerable community group** due to their lack of awareness of risks posed to them. A better understanding of migration patterns for students will help determine the level of risk posed to residents in St Augustine.

Community participants perceived a risk to students and their lack of awareness came from their reliance on public transport, particularly when traveling to and from the Night Time Economy. It was

suggested that this is due to low income amongst the student population who are unlikely to own private vehicles. Reliance on public transport, together with naivety to local threats suggests that students are perceived to be at an increased risk of victimisation in St Augustine. This is a good example of RAT (Cohen & Felson 1979) and the possibility of victims and offenders crossing paths (see table 11.31).

Table 11.31: data for analysing vulnerable community groups

Category	Data	Position	Weighting
Student population demographics	Student primary home town	Indication of non-local students and their level of vulnerability	c
	Number of students	RAT: Indication of number of potential victims	c
	Number of international students	RAT: Indication of number of potential victims	c
Reliance on public transport	Private vehicle ownership	RAT: Indicates number of people at risk	c
	Crime on public transport	Indicates extent of problem	c
	Public transport security	Potential barrier if security is low	b

Funding allocation was highlighted by participants as a factor which causes a false sense of economic security amongst citizens. Participants suggested that due to the lucrative oil industry in Trinidad, the country has come to be perceived as relatively wealthy. As a society therefore they are not generally concerned about an economic collapse yet the way in which Government spend and invest money is not considered to be sustainable. This is believed to be not only due to a lack of planning, but also a result of a lack of knowledge and concern for the sustainability of Government interventions. Public investment by Government is perceived to be short term with little or no consideration for the long term impact. It is suggested that awareness in this sense is limited since society has a false perception that the region will always be financially stable at the expense of sustainable planning. This reflects SDT (Shaw & McKay 1942) since the impact may be that people are likely to be despondent if they feel their Government is failing them. Communities may then turn to delinquency, causing a declining social environment and reduced ownership and community

control (see Shaw and McKay 1942) (see table 11.32). This notion was also discussed by Lovelace (2013) as mentioned in the study area review (section 2.2).

Table 11.32: data for analysing funding allocation

Category	Data	Position	Weighting
Government funding	Funding allocation to community development	SDT: Information on risk to social decline	c

The **media** is believed to fuel fear of crime in Trinidad which impacts the validity of community awareness. Participants argued that today's society has a lot of distrust which is perceived to be a direct result of the way in which the media portrays crime and other issues affecting the lives of communities. Whilst the media is a vital source of information for many of the region's citizens, reality may be obstructed by the nature of news stories which are considered to be of a disturbing nature. Elderly populations suggest they are especially affected by the media where reports are believed to be primarily drug and gun related and perhaps something which was less of an issue in the past. One resident commented that *"you now these drugs are a big issue now, everyone is terrified"* (Full time mum P5F). Such explicit information accessible from many sources is inevitably likely to impact upon the awareness of Trinidadian communities. The British High Commission also noted that the media is responsible for many violent revenge crimes as a result of confidential information being published such as witness names and speculation about relationships between victims and offenders (see table 11.33).

Table 11.33: data for analysing the media

Category	Data	Position	Weighting
Crime Stories	Crime stories per year	SDT: Informs risk to fear and social decline	c
	Integrity of news stories (language and confidential information)	Potential barrier if media is not regulated	b

11.2.9: Agency Involvement

Communities in St Augustine explored their experience of agency involvement in the study area and highlighted five categories which they considered important for a good quality of life and reduced levels of fear.

Policing was considered by communities to be a major issue in terms of their effectiveness in crime control and restoring public confidence. Police patrols were not considered to be focused in high risk areas which increases vulnerability to communities in surrounding locations. Participants also felt that the procedure from arrest to prosecution was ineffective and that due to a lack of evidence, cases will often be dropped without prosecution; again putting the public at risk. If offenders received custodial sentences, their integration back into society was perceived to be unregulated meaning that witnesses and victims became vulnerable in acts of revenge. In other specialist police branches, participants felt that they had no accountability which is believed to significantly reduce confidence in the police.

Inadequacies of transport policing were highlighted in particular and the lack of response to reports from the public. It is assumed by participants that this reduces confidence in the police and reduces the likelihood of reporting a crime. An interview with the Trinidad and Tobago Police Service also revealed that the Government has disbanded many police branches including the border control unit which controlled drug smuggling up the rivers. Some police officers suggested this was a corrupt move by the Government in order to help fuel the drug trade. Participants also suggest that corruption is high in the police service as a result of poor police recruitment and training processes.

Squatter settlements were a recurrent issue amongst community participants which highlighted concerns over behaviour of residents and the risks posed to surrounding communities. Participants felt that police did little to regulate behaviour amongst squatter communities which is suggested to often escalate into high profile murders, violence and domestic abuse. Limited police control over squatter settlements is believed to significantly increase fear amongst neighbouring communities in St Augustine. These issues reflect RAT (Cohen & Felson 1979) with potential offenders on the street,

SDT (Shaw & McKay 1942) and SCT (Hirschi 1969) with reduced public confidence and lack of social control (see table 11.34)

Table 11.34: data for analysing policing

Category	Data	Position	Weighting
Police beat areas	Police patrol areas	Potential barrier if police patrol is poor	b
Law enforcement procedures	Standard law enforcement process	Potential barrier if law enforcement is poor	b
	Miscarriage of justice	Potential barrier if policing system is poor	b
Offender rehabilitation	Recidivism rates	Potential barrier if repeat offending is poor	b
	Rehab process	Potential barrier if offenders are not rehabilitated	b
Police response	Response rate	Potential barrier if police response is poor	b
	Response time	Potential barrier if police response is poor	b
Police branch accountability	Special police branches	Potential barrier if police special branches are inadequate	b
	Police border control	Potential barrier if border control is weak	b
	River locations	Information on crime risk locations and RAT of drug gangs	a
Regulation of squatters	Partnership with land settlement agency	Potential barrier if there are no partnerships	b
Police community relationship	Community policing	Potential barrier if the police do not engage with communities	b
Police recruitment and training	Police application process	Potential barrier if police recruitment is not regulated	b

Security services were considered to be an important agency for public protection in Trinidad, predominantly campus security at UWI. Students and the wider community expressed concern that campus security creates a false sense of safety amongst students on campus when leaving the boundary of the university where security services end. This is an example of RAT (Cohen & Felson 1979) and the risk to students during their routine activities (see table 11.35)

Table 11.35: data for analysing security services

Category	Data	Position	Weighting
Private security services	UWI security patrol boundaries	RAT: Identification of risk areas	a
	UWI security service provision	Potential barrier if security is inefficient	c

Community participants in St Augustine highlighted the lack of child development as a pressing issue which restricts the quality of life of residents and often leads to crime in later years. It was argued that **social service agencies** were non-existent therefore failing to improve the lives and prospects of young talented children. It was argued that there are *“no talent scouts working for the ministry of sports in Trinidad, absolutely none. If you are Trinidadian, you can decide to go and play for the national team in any sport that you want to because there’s no organisation that really looks or create or nurse real talent and I think that’s one of the failings that we have when it comes to our youths in society; their talent is wasted”* (Sales Consultant, P5F). Investment in social service agencies to motivate and guide youths is considered to be an important requirement for Trinidad society. This is an example of SDT (Shaw & McKay 1942) and SCT (Hirschi 1969) in that communities will become disengaged and demotivated to achieve and engage in their community (see table 11.36).

Table 11.36: data for analysing social services

Category	Data	Position	Weighting
Social services	Youth work programmes	Potential barrier if programmes are poor/non existent	b
	Youth employment schemes	Potential barrier if schemes are poor/non existent	b
	Youth education opportunities	Potential barrier if there are no opportunities for youths	b

When discussing the impact of agency involvement on resident’s quality of life and community sustainability, **International support** was highlighted as a factor which negatively influenced communities in Trinidad. Residents suggested that even though the country has a lot of poverty, due to the wealth in the oil and gas industry it does not qualify for international funding and is

economically ranked as a developed country. Participants perceived that small local businesses struggle in this respect and only Government organisations are economically stable. This reflects ST (Merton 1957) and the risk of communities turning to crime due to economic strain (see table 11.37).

Table 11.37: data for analysing International support

Category	Data	Position	Weighting
International funding criteria	International funding criteria	Potential barrier if funding is not obtained	b
	International projects	Potential barrier if projects do not exist	b
	Business support/grants	Potential barrier if businesses aren't supported	b
	Trinidad's economic status	Indication of likelihood of obtaining funding	b

Local community services were considered a major issue amongst participants. They stressed that society is very polarised politically and racially and there is little that brings them together in terms of common interests. One participant argued *“the impact of this is very negative because we struggle to get people to come together to improve lives and our community as a whole”* (Teacher P2M). This meant that there was a degree of isolation and no community efficacy therefore impacting the level of engagement and overall community control. These issues reflect SDT (Shaw & McKay 1942) and SCT (Hirschi 1969) (see table 11.38).

Table 11.38: data for analysing Local Community Services

Category	Data	Position	Weighting
Community initiatives	Community development programmes	Potential barrier if there are no community development programmes	b
	Community centres	Potential barrier if community centres do not exist	b
	Community engagement programmes	Potential barrier if community engagement programmes do not exist	b

11.2.10: Preparedness

In terms of preparedness, participants highlighted links to awareness of problems. In order to be prepared, there must be a level of awareness and therefore there is a degree of reliance on factors mentioned earlier such as awareness of religious and political conflicts and crime stories in the media etc. With regards to vulnerable community groups and their lack of awareness of risks, participants noted that **history** is vital to reducing vulnerability and increasing preparedness, particularly for vulnerable community groups. Participants argued that *“people just have no sense of the past and this obstructs our ability to be aware of things” (Administrator P4F)*. In discussing major disasters in Trinidad’s history, it was argued that *“we forget about these issues and we forget about the things that caused the problems... there is a lack of education to get people to understand the source of the problems and a lack of will in getting the government to do something about it” (Teacher P2M)*. These issues relate to SCT (Hirschi 1969) in that without a level of awareness and education and power, communities will have little social control and are therefore likely to decline if states of emergency/disasters do occur (see table 11.39).

Table 11.39: data for analysing history in relation to preparedness

Category	Data	Position	Weighting
Disaster preparedness	Education	Potential barrier if education of history is poor	b
	History of major disasters	Indication of risk to potential future disasters	c
	Funding for disaster management	Potential barrier if disaster management is poor	b

Child development was considered to play a vital role in the preparedness of communities.

Participants perceived policing in the 70’s and 80’s to be even less effective than it is today which resulted in a number of broken marriages, poor educational attainment and increased child poverty. It was argued that this generation of adults had a poor upbringing and there was no preparation for the effects in later life. These issues reflect social learning theory (SLT) (Bandura 1977) in the effects early childhood development has in later years; also ST (Merton 1957) if potential offenders are economically strained (see table 11.40).

Table 11.40: data for analysing child development

Category	Data	Position	Weighting
History of child development	History of child poverty	Indication of risk to offending	c
	History of broken marriages	Indication of risk to offending	c
	History of educational attainment	Indication of risk to offending	c
	History of child delinquency	Indication of risk to offending	c
	Historic law enforcement	Potential barrier if law enforcement processes were poor	b
	Crime rates per year	Information on extent of problem	c

11.2.11: Governance

Governance was considered a major issue by community participants in terms of the impact on their quality of life, the impact on crime and fear and the overall sustainability of the community. Six separate categories were discussed, one of which was **funding**. Participants felt that the budgets set by Government are not targeted towards priority issues such as welfare and crime reduction, disaster risk reduction and local community development, all of which is considered to be corrupt (see table 11.41).

Table 11.41: data for analysing funding

Category	Data	Position	Weighting
Funding sustainability	Funding criteria	Potential barrier if funding governance is poor	b
	Funding timescale and planning	Potential barrier if funding processes are poor	b
	Funding for crime prevention, disaster risk reduction and local community development	Potential barrier if funding for specialist interventions is poor	b

With regards to corruption, different government **ministries** were considered problematic.

Participants perceived a degree of corruption within the Government, and that there were too many

ministries operating with very poor communication protocols. Instead of ministries working together, participants and the British High Commission felt that they worked against each other, competing for control over certain political changes. With regards to corruption, much of this was believed to derive from loopholes in policies which allow for particular matters or processes to be unregulated. Issues raised here were confirmed by both TCPD and the British High Commission although recorded evidence of this communication was not authorised by the commission. This relates to SDT (Shaw & McKay 1942) and SCT (Hirschi 1969) in that reduced confidence and assistance from the Government may contribute towards social decline and reduced community control (see table 11.42).

Table 11.42: data for analysing ministries

Category	Data	Position	Weighting
Corruption	Location of funding allocation	Indication of deprived areas	c
	Reports on corruption	Potential barrier if corruption is problematic	b
Political loopholes	Ministry of planning organisational structure (TCPD)	Potential barrier if TCPD has reduced power	b
	Ministry responsibly	Potential barrier if ministries do not take responsibility for crime prevention	b

With regards to the different **local government agencies**, community participants highlighted a major gap with regards to the management and maintenance of the environment, particularly the cleanliness of streets, green spaces and recreational facilities. It was suggested that these services would greatly improve the quality of life of residents and reduce the fear of using public spaces. Participants felt that community management was lacking particularly with regards to the frequency of rubbish removal, providing bins for dog faeces etc. This reflects BWT (Wilson & Kelling 1982) and the impact on public use of space and the propensity for crime to escalate (see table 11.43).

Table 11.43: data for analysing local government agencies

Category	Data	Position	Weighting
Environmental Management	Local services for community development	Potential barrier if community management processes are not in place	b
Environmental Maintenance	Unmaintained areas	BWT: Indication of crime risk	a
	Maintenance organisations	Potential barrier if organisations are lacking	b

With regards to the governance of **policing**, participants felt that the level of crime reflected poor police governance which is considered to be rife with corruption. It was argued that there is extremely low public confidence in the police and a lot of victimisation is because of police inefficiency. It is believed that there is a lot of cross border crime with little communication between other Caribbean islands in which offenders can become lost and the likelihood of conviction is reduced. This reflects RAT (Cohen & Felson 1979) and the movement of offenders as well as social control (Hirschi 1969)/disorganisation theory (Shaw & McKay 1942) in that corruption will reduce public confidence and cause a reluctance to engage (see table 11.44).

Table 11.44: data for analysing police governance

Category	Data	Position	Weighting
Police	Police complaints	Potential barrier if policing is poor	b
Corruption	Police arrests	Potential barrier if policing is poor	b
	Police convictions	Potential barrier if policing is poor	b
Crime control	Border control	Potential barrier if policing is poor	b
	Police partnerships with other Caribbean islands and other agencies	Potential barrier if policing is poor	b

Another major issue regarding Government accountability and the impact this is believed to have on the quality of life relates to **employment**. Participants suggested that the Government does not provide enough jobs for Graduates which means that many of the country's young educated

community groups leave Trinidad in search for employment elsewhere. It was suggested by community participants and by the British High Commission that a great deal of professional expert knowledge is contracted in from other nations. Participants argue that not only does this reduce internal job creation but it reduces demand for educated Trinidad citizens. It was also suggested that since the retirement age increased and staff turnover has reduced, youth unemployment has risen. This reflects ST (Merton 1957) in that high unemployment will have an economic strain on communities (see table 11.45).

Table 11.45: data for analysing employment

Category	Data	Position	Weighting
Employment rates	Rate of youths in full time employment	ST: indication of risk to economic strain	c
	Rate of 50+ in full time employment	ST: indication of risk to economic strain	c
	Youth unemployment rate	ST: indication of risk to economic strain	c
	Youth employment programmes	ST: indication of risk to economic strain	c
	Graduate employment rate	ST: indication of risk to economic strain	c
	Graduate employment schemes	Potential barrier if employment schemes do not exist	b

Government accountability for crime prevention was considered an important aspect with regard to the quality of life of citizens. Participants argued that there were few Government-led initiatives for crime prevention in Trinidad and non within the St Augustine area. This was confirmed by the Citizen Security Programme directed by the Ministry of Defence who only implement social crime prevention initiatives in 22 high crime communities (see table 11.46).

Table 11.46: data for analysing accountability for crime prevention

Category	Data	Position	Weighting
Crime Prevention	Government crime prevention programmes	Potential barrier if crime prevention programmes do not exist	b

	Areas within the government where crime prevention lacks and partnerships are required	Potential barrier if partnerships are lacking	b
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11.3: Conclusion

This chapter set out to explore indicators of social sustainability with community participants.

Community engagement was considered the most valuable process for exploring conceptual indicators to identify context specific features that impact crime, fear and the overall quality of life of communities. To ensure sustainable crime prevention initiatives, needs led, locally focused interventions are needed which therefore requires knowledge of community needs and community identification of problems that can only derive from engagement with local residents.

Focus groups with community residents explored the indicators of social sustainability to allow communities to identify issues which they considered to impact on their feelings of safety and quality of life, including the way in which they perceived and used public spaces. This gave first-hand knowledge of the local environment and the way in which this impacts the lives of communities and identified context specific features required to analyse risk to crime, fear and a reduced quality of life in St Augustine. This information was of high integrity due to the variation of community demographics within each of the groups, therefore reducing bias in the perceptions of individuals or minority populations.

The categories identified were emergent in nature, capturing responses from community participants and exploring the impact on their quality of life. Depending on the context of issue discussed by participants, specific data were highlighted to explore each issue individually and synthesise the data with theories of crime and criminal motivation. It is appreciated that the integrity of the source may be considered low due to the fact that the features identified were based on opinions and not fact however it is argued that CPTED relies on a positively functioning environment operated by humans

and their response to the environment. If community residents perceive the environment negatively and this impacts the way in which they operate and behave in the environment, then CPTED efforts will be unsustainable and crime reduction effects may be compromised. It is therefore argued that utilising participant's perceptions and experiences in the context of CPTED generates the most valuable source of information. Impact ratings and explanations as to the relationship to crime theory and link to CPTED were provided as a way of selecting the most important and impactful information to explore. The integrity of the claims made by participants was also considered by the researcher hence why the impact weighting was included. Data categorised as impact 'a' would be priority for data collection and reporting this information to professionals. Data which rated impact ranking 'b' and 'c' would be obtained where possible but only used for supporting information or to identify potential barriers to positive crime reduction effects.

Results from this section of the fieldwork confirm that using the model for evaluating social context to focus community engagement provides suitable context specific features of the physical and social environment which impact on crime, fear and the overall quality of life of communities.

Appendix I provides a synthesis of context information that was developed following the data collection and analysis. This information came from the responses of community participations and further analysis on the factors that influence crime, fear and the quality of life.

Chapter twelve will report on the impact that the context information had on professionals understanding and ability to make informed decisions for CPTED following the provision of context information.

PART E

CHAPTER 12: The Impact of Context

Part D of this thesis achieved several research objectives set out at the beginning of this PhD.

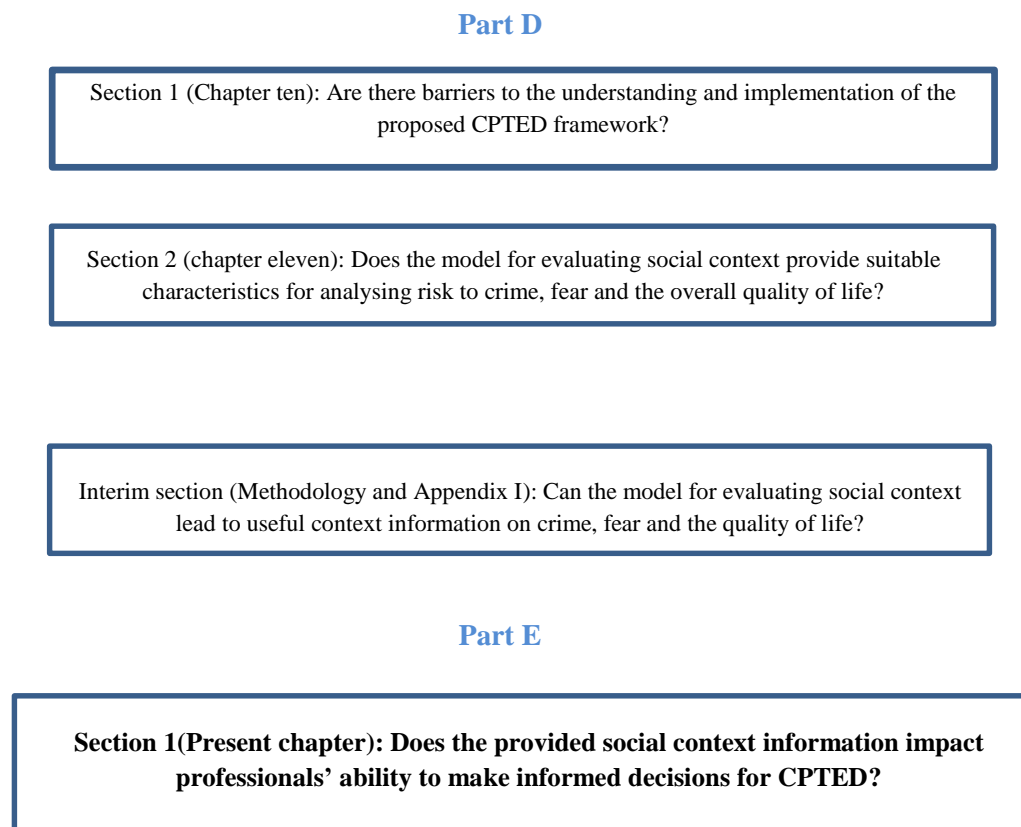
Following the successful identification of inconsistent framework terminology as a primary source of communication and collaboration barriers and the absence of social context restricting sustainable application of CPTED principles; Part D explored the transferability of a proposed restructured and re-emphasised CPTED framework. This confirmed few communication barriers, suggesting interpretation of the terminology was relatively easy. Several implementation barriers were also identified, many of which confirmed that a lack of social context knowledge restricted practical consideration of CPTED principles.

The proposed model for evaluating social context in chapter eight was used by exploring each of the indicators with local communities in the study area of St Augustine. During this engagement, local community participants identified features of the physical and social environment that impacted upon their perception of crime, fear and overall quality of life. The features were explored in the built environment and data were collected for analysis and synthesis with theories of crime and criminal motivation (See Appendix I). The context information and the relationships between environmental features and crime risk was provided to planning professionals who took part in the focus groups reported on in chapter ten. This chapter provided a ‘post context’ analysis of how impactful the social context information was on professionals understanding of the CPTED principles and their ability to make informed decisions for CPTED planning.

Because the case study area was located in Trinidad, TCPD was the only organisation studied in which the decision making was based on a real planning process since the decisions made by TCPD for CPTED were likely to be incorporated into the St Augustine Education City development. Both OpenPlan (private planning consultancy) and the Designing Out Crime Group considered the summary of context information on a scenario basis (not incorporated into a planning process) and therefore put forward scenario type/hypothetical recommendations; although OpenPlan do have

knowledge and experience in the study area. It was however vital to include these organisations so that the opinions and feedback from TCPD were triangulated across a range of organisations and professional disciplines. This chapter will report on the methodology process of Section four of the fieldwork illustrated in Figure 12.1

Figure 12.1: Fieldwork stages



12.1: Methodology

This section of the fieldwork replicated the focus group conducted in Section 1 of the fieldwork (Chapter ten) with Trinidad's Town and Country Planning Division, OpenPlan (private planning consultancy) and the Designing Out Crime Group. The aim was to establish if the knowledgebase of built environment professionals changes as a result of the context information provided. That is, does contextual information help professionals make better informed decisions for crime prevention in the built environment? Whilst the responses of professionals were compared to the first focus groups and

the frequency of key themes were analysed, the analysis of the final focus groups were more qualitative; focusing largely on comments made by professionals in response to the context information provided. This delivered more informative feedback on professionals' interpretation of the context information; if and how it was relevant and their opinions on the importance of context information on both sustainable CPTED planning and the integration of CPTED principles into sustainable development practice. Whilst some comparative analysis was carried out, comparing the frequency of themes and categories was not considered to be necessary or a robust form of analysis due to other external factors which may influence the number of barriers put forward in either of the focus groups. The aim of the final focus groups was to explore indications of change in knowledgebase of professionals and evaluate their feedback regarding the importance of the context information.

The qualitative coding of transcripts for each organisation can be found in Appendix J. The process of coding the information into themes and categories utilised the same coding categories from the initial focus group in Chapter ten. Although the researcher did remain open to new categories emerging, there were no new categories to emerge from the analysis.

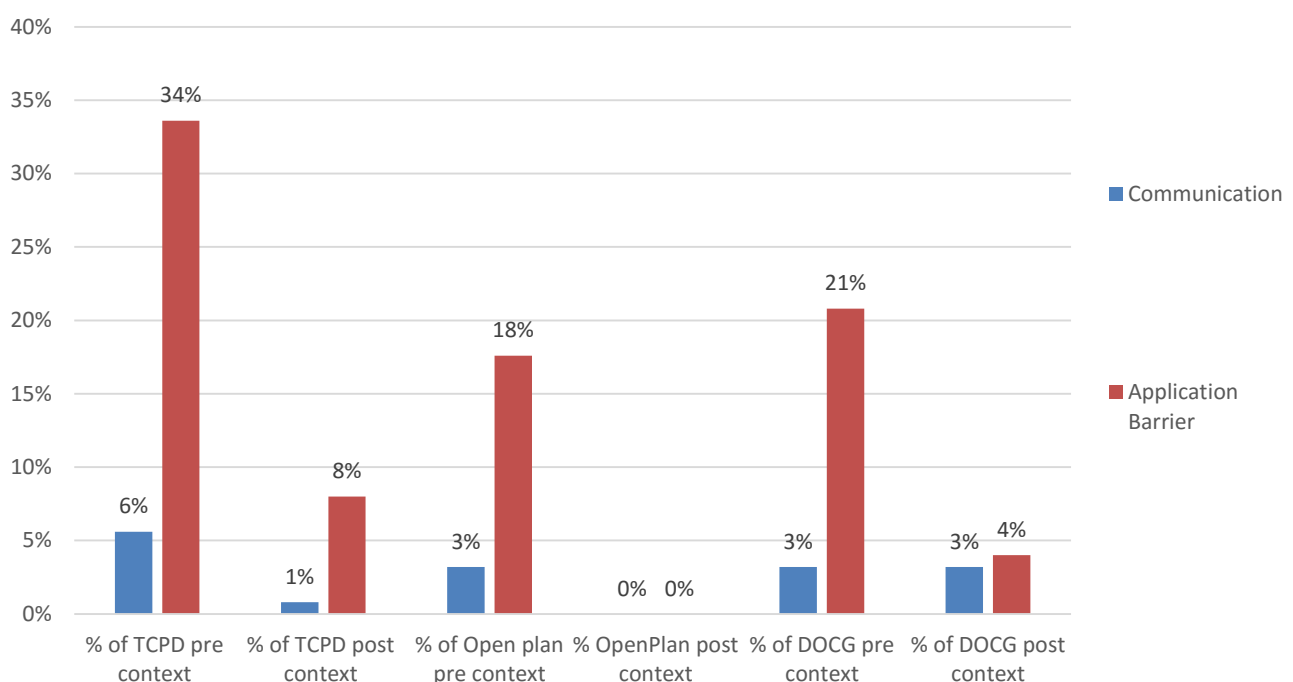
The comparative analysis of barriers identified by participants will be discussed first to identify any changes to participants understanding of CPTED or their ability to implement the CPTED principles. Qualitative analysis of each organisations feedback on the context information will then be discussed individually to explore perceptions of context provision and the impact this has had on their understanding and application of the CPTED framework.

12.2: Results

Similar to chapter ten, the analysis conducted in this section started broadly by exploring generic categories which emerged from communication with professionals and subsequently narrowed down to more specific sub categories. The context of each category was then discussed in further depth.

Communication and Application barriers differ in that Communication barriers reflect issues which restrict the understanding of CPTED or issues which restrict knowledge transfer. Application barriers relate to issues which restrict the implementation of CPTED or restrict its effectiveness. Results of the focus groups conducted in this section revealed 74 barriers in total (both resolved and unresolved) and indicate that there were noticeable differences pre and post context provision, particularly regarding OpenPlan and DOCG (See Chart 12.1)

Chart 12.1: Communication and application barriers pre and post context provision



Post context provision barriers were divided into *resolved* and *unresolved* categories to differentiate between the contexts of the feedback provided. Professionals were able to highlight particular solutions to existing barriers or suggest ways in which CPTED could be implemented which reflected an improvement in knowledge and the ability to make informed decisions. In such instances, the communication content was still associated with a theme or category as per chapter ten, the difference being that the context of the communication reflected a positive rather than negative issue. Unresolved barriers on the other hand reflected issues which remained to be a potential barrier to the

understanding or implementation of the CPTED framework which therefore was unaffected by provision of social context information or the restructure of the CPTED framework.

The number of barriers per organisation was calculated as a percentage of all barriers (both pre and post context). This made the data comparable between organisations based on the frequency in the discussions as well as allowing comparative analysis pre and post context provision. Analysis of communication and application barriers revealed varied results across the three organisations. Whilst it was recognised that overall, barriers post context provision were significantly lower than pre context provision barriers and that application barriers were generally higher across all three organisations, they were also significantly higher within TCPD both before and after the provision of context information. Both Openplan and DOCG had different results revealing significantly higher rates of application barriers pre context provision similar to TCPD yet the Openplan focus group post context provision revealed no unresolved barriers and the ratio of application to communication barriers within DOCG significantly reduced to an almost equal amount (See chart 12.1).

Because the context of the three organisations is varied, this result was to be expected due to the difference in disciplinary position and level of pre-existing CPTED knowledge. TCPD represent a different case from both Openplan and DOCG due to its international location, lack of pre-existing CPTED knowledge and its varied political and cultural context. As an organisation TCPD operate from central Government and their role is to function as a regulatory body for planning of the built environment, it is therefore assumed based on the context of the information provided, that application barriers remained higher due to difficulties in enforcing CPTED principles from a central Government position. It was highlighted on a number of occasions that inadequate partnerships and support from local authority organisations was the main issue as to why application barriers remained post context provision.

The most noticeable difference pre and post context provision was from OpenPlan who revealed no existing unresolved barriers post context provision. Openplan is a private planning consultancy who collaborate extensively across the UK public and private sector as well as internationally in various

Caribbean regions. They had varied but basic knowledge of CPTED pre context provision and results indicate that context information had a significant impact on their ability to understand and apply the CPTED principles. As an organisation, Openplan were different from other planning consultancies due to their overt focus on community development and engagement. It is assumed that their prior awareness and experience of social conditions and engagement with local residents made them open to more socially ascribed components of the CPTED framework whilst their realistic interpretation of the context information allowed for practical consideration.

DOCG had similar results to TCPD but on a less extreme scale. Post context provision saw a significant decrease in application barriers but not in communication barriers which is interesting given that the organisation represent a professional expert body for advising on crime prevention in the built environment; yet barriers to the understanding of the CPTED concepts existed both pre and post context provision. It is assumed that the lack of understanding of CPTED principles is a direct consequence of the statutory nature of SBD practice being largely bound by aspects which are less socially ascribed and more physically delineated. As discussed in chapter ten, participants highlighted that they were unfamiliar with Positive Reinforcement concepts which reinforced this point however after the provision of social context information, this issue was resolved. P3M CPDA stated *“I can’t think of any aspect of the CPTED framework which I am unfamiliar with now. Previously I had issues with the Positive Reinforcement concepts but this information makes it much clearer”*. The lack of knowledge amongst crime prevention experts also takes us back to earlier parts of the thesis, particularly the literature review (Section 2.6) and results from chapter five and seven which found inconsistencies in the knowledgebase of CPTED stakeholders due to conflicting guidance and framework terminology.

12.2.1: Generic category analysis

Barriers to communication and application of CPTED were explored further by looking at the generic categories illustrated in figure 10.2 (Chapter ten). These specified which of the barriers were general to multi-disciplinary working, which were barriers in multi-disciplinary working but specific to CPTED, which were specific to CPTED alone and which were specific to the area context. The

researcher also remained open to new categories emerging post context provision but this did not occur. The frequencies of barriers were analysed pre context provision and the frequencies of *unresolved* barriers were analysed post context provision by calculating a rate of all barriers which again made them comparable pre and post context provision and between organisations.

All three organisations revealed a similar pattern with an increased rate of barriers in multi-disciplinary working which are specific to CPTED (See chart 12.2, 12.3 and 12.4)

Chart 12.2: TCPD pre context barriers and post context *unresolved* barriers

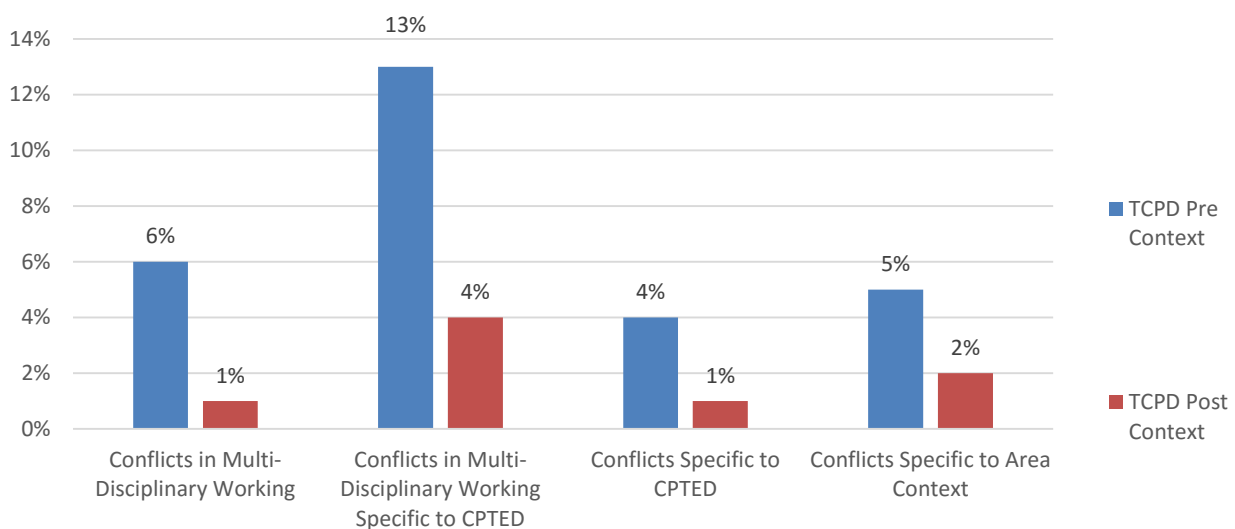
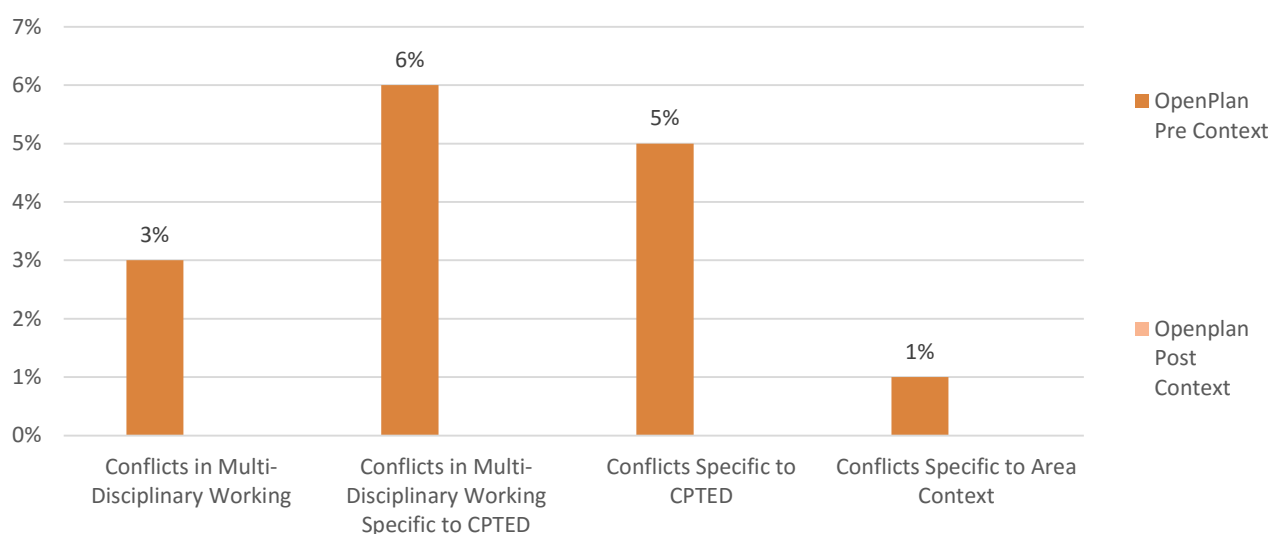
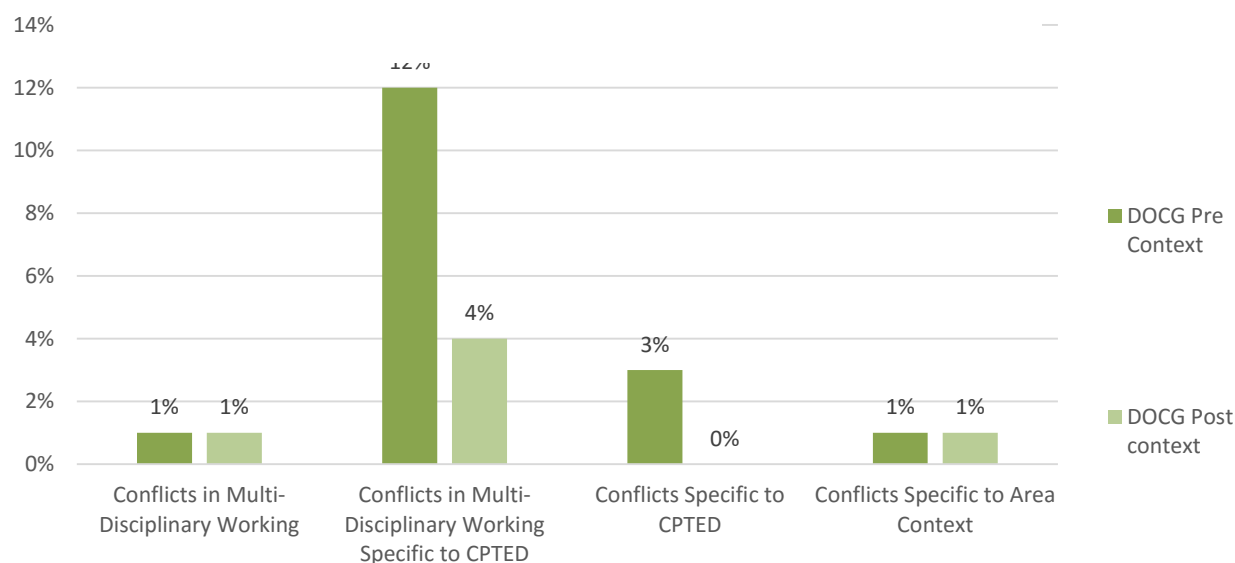


Chart 12.3: OpenPlan pre context barriers and post context *unresolved* barriers



Of importance here is the difference in result between the private research consultancy compared to Government led organisations. Openplan had no unresolved barriers which meant that any problems

Chart 12.4 DOCG pre context barriers and post context *unresolved* barriers



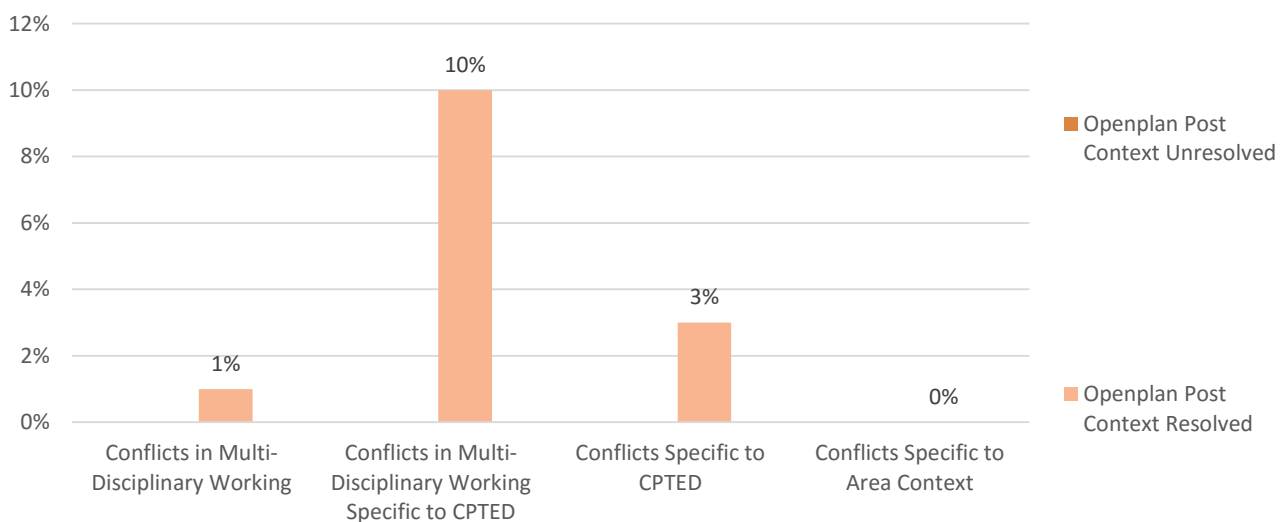
they had initially identified; solutions had been suggested to resolve the issue.

Results indicate overall, post context focus groups had significantly less barriers across all four categories except in the DOCG which had an equal ratio in two of its categories; although the value of these figures are low. It may be suggested that an equal ratio of barriers which are specific to the area context may be related to the fact that the group had no pre-existing knowledge of the case study area

and were required to consider the context information and the CPTED framework on a scenario type basis. Also in relation to conflicts in multi-disciplinary working, as an organisation DOCG are controlled and funded by the Government which highlighted issues with resource allocation and funding in relation to sustainable social context analysis which otherwise may not be the case with private organisations like OpenPlan. Nevertheless, conflict in multi-disciplinary working specific to CPTED was clearly the basis of many communication and application barriers within the built environment field, some of which remained post context provision.

Before analysing this category in more detail, the contrast in *resolved* and *unresolved* barriers required further exploration in order to identify the impact of context information on professionals' interpretation and application of the CPTED framework. Openplan was identified as the organisation with the highest ratio of resolved barriers to unresolved barriers having identified zero unresolved barriers post context provision (see chart 12.5). This shows the proportion of resolved barriers to unresolved barriers, again highlighting the flexibility of Openplan as a private planning consultancy.

Chart 12.5 OpenPlan resolved and unresolved barriers

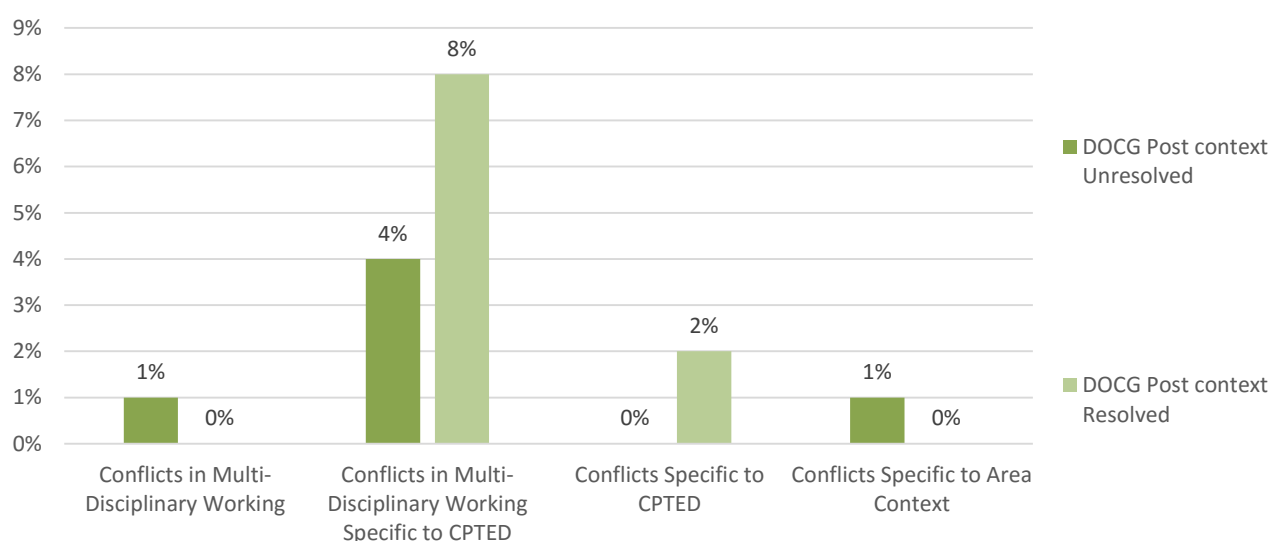


Feedback from Openplan indicated that context provision has significantly impacted their understanding and ability to implement CPTED. Resolved barriers ranged across three categories but more generally reflected reduced knowledge gaps, the importance of context provision for both

CPTED implementation and policy integration and recognising the need for effective partnership working. As a consultancy organisation with flexibility for innovation, it is considered that context information would be most impactful to planning within private organisations that have the opportunity and scope to consider alternative approaches.

DOCG also indicated a good response in terms of barriers to multi-disciplinary working which are specific to CPTED and barriers which are solely specific to CPTED (see chart 12.6). A similar pattern was revealed in the variation of resolved and unresolved barriers except for the categories previously mentioned as having no change pre and post context provision. These two categories had more unresolved barriers than resolved barriers although the value was minimal.

Chart 12.6 DOCG resolved and unresolved barriers

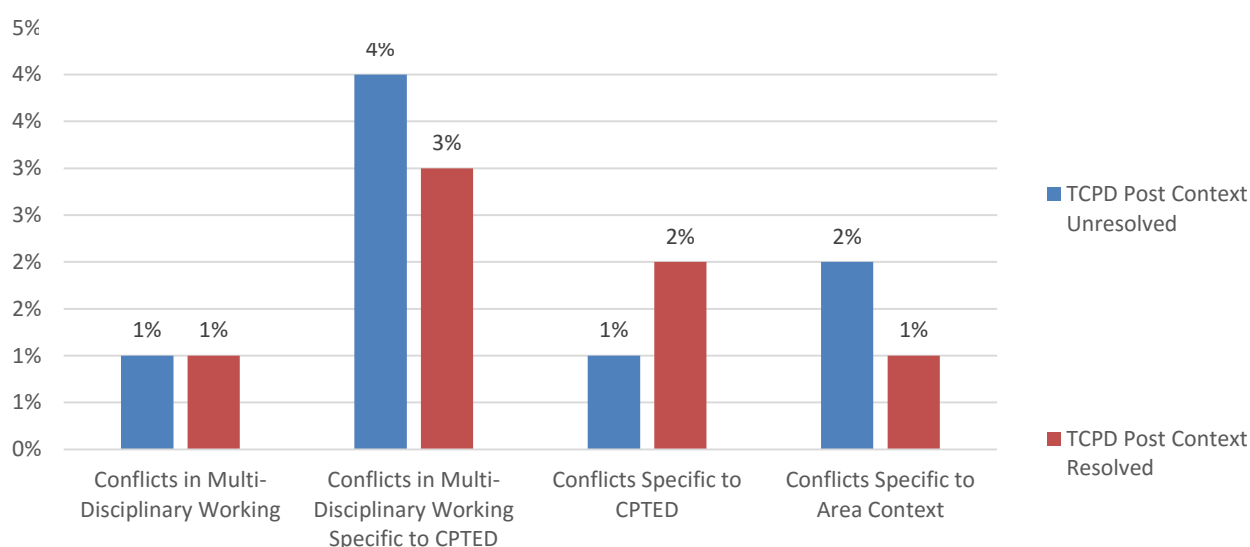


The majority of positive feedback again related to reduced knowledge gaps particularly in reinforcing professionals understanding of the relationship between design and crime and wider social factors which impact behaviour and quality of life. There were also several policy recommendations made which reinforce points from chapter eight regarding the integration of CPTED principles into sustainable development policy. P1M CPDA argued that *“A major policy change will be needed to integrate the context evaluation model and the CPTED framework into sustainable development*

policies and standards so that they become a necessary and integrated aspect of planning and urban design”.

TCPD stood out as the organisation having the most post context unresolved barriers, one category containing more post context barriers than pre context barriers and one category of equal weighting (see chart 12.7).

Chart 12.7 TCPD resolved and unresolved barriers



As the only organisation being able to fully consider the context information on a realistic and practical basis, these results were interesting. The context of the resolved feedback varied between reduced knowledge gaps, improving policies to support CPTED planning and recognising the need for improved partnership working and data collection. Whilst the latter three are identified as issues which remain, the fact that TCPD recognised these issues and proposed potential solutions in light of the context information provided suggests an improvement in knowledge by the organisation. It is considered that the higher rate of unresolved barriers post context provision may be a result of many factors. TCPD were the only organisation which fully considered context information on a realistic basis and therefore were likely to identify more practical barriers. It could be argued that this may not be an impacting factor due to such positive feedback from Openplan; another organisation with

significant local context knowledge and experience. However, TCPD are a Government body as previously mentioned and unlike Openplan, they do not have the flexibility or scope for innovation to adapt and explore new approaches and are therefore bound by institutional restrictions which are reflected in the context of their unresolved barriers.

12.2.2: Sub Category analysis

As the category featuring the highest rate of resolved and unresolved barriers both pre and post context provision across all three organisations, ‘barriers to multi-disciplinary working specific to CPTED’ was explored in further detail to establish the context of the remaining issues and the resolutions put forward. This category contained the following sub categories:

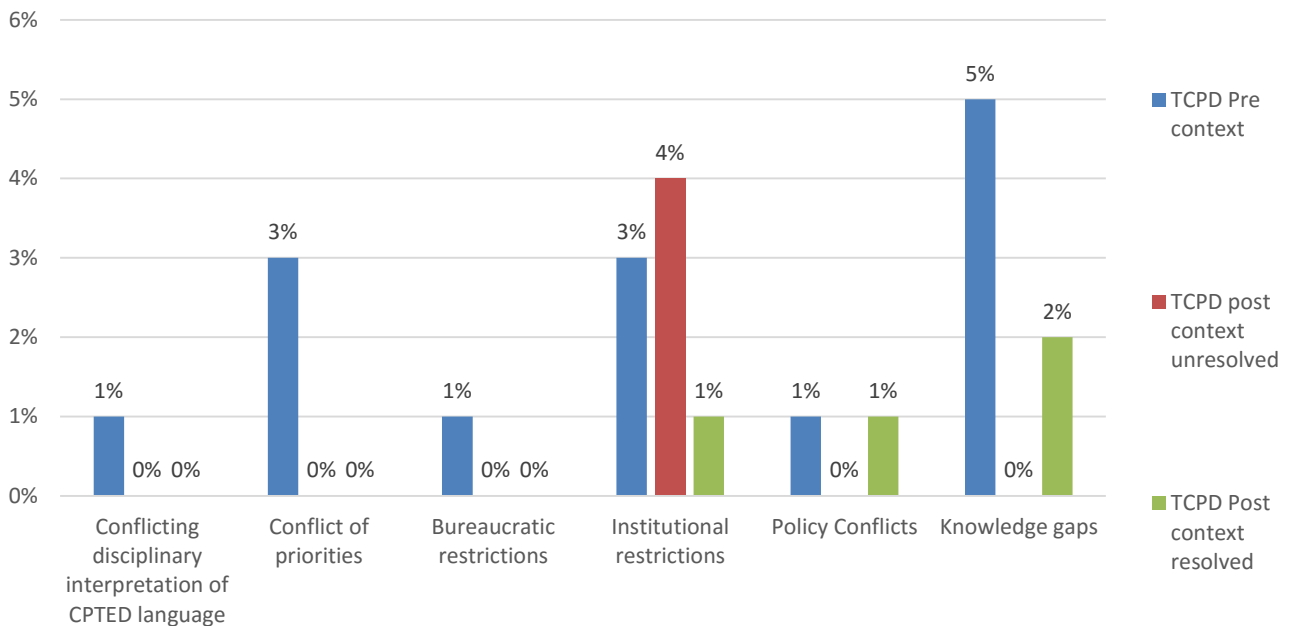
- Conflicting disciplinary interpretation of CPTED language
- Conflicting priorities
- Bureaucratic restrictions
- Institutional restrictions
- Policy conflicts
- Knowledge gaps

12.2.2.1: TCPD

Results varied across each organisation which was to be expected given the varied nature of their work and position in the planning process. TCPD are regulators of the built environment and part of central Government, OpenPlan are private planning consultants and therefore likely to be controlled and regulated by TCPD and DOCG are an independent body of experts with a non-statutory (in some areas) role in enforcing crime prevention standards within the planning process. It was therefore expected that different and somewhat conflicting barriers would emerge from each organisation and the impact of context information is likely to be varied.

From looking at each of the three organisations individually, whilst there was some variation in the pre and post context barriers, knowledge gaps represented the most significant barrier in all three organisations (see chart 12.8 for TCPD).

Chart 12.8: TCPD Conflicts in Multi-Disciplinary working specific to CPTED



Knowledge gaps within TCPD were the most significant in terms of the comparison between pre context and post context feedback. As discussed in chapter ten, pre context barriers generally reflected issues relating to the knowledgebase of other stakeholders in the planning process and a significant lack of social context knowledge within TCPD for CPTED implementation. Post context provision there were no unresolved barriers which suggests that the context information provided helped reduce knowledge gaps with regards to the above issues. Other issues specifically identified by TCPD as positive aspects of knowledge improvements related to how local context information improves professionals understanding of CPTED. P3M Town Planner identified that *“as a set of principles, I think CPTED is great now. There is a lot of information that you have to wrap your head around in order to fully appreciate the relationship between crime and design which I didn’t understand so much before this information was provided”*. Other aspects regarding knowledge which were identified as positive changes by TCPD related to the impact that context information has on enforcement. P6F Town Planner highlighted *“I think all the social information which was provided was very important for our analysis as planners. I think it helps us in policy making and regulating design also”*. In terms of knowledge gaps, the results presented here indicate that by improving TCPD

knowledge through local context information, as an organisation they will be better equipped for regulating and enforcing crime prevention design to other stakeholders in the planning process. Whilst these findings indicate that context information improves TCPD knowledge, their existing knowledge regarding the relationship between the environment, crime and behaviour is limited. This indicates that as an organisation they would be dependent upon external consultancy which in Trinidad tends to happen frequently. The training and education provided to built environment professionals was beyond the scope of this PhD but this is a factor worthy of future consideration if the a 3rd Generation approach to CPTED was ever considered in practice.

Institutional restrictions were highlighted as another significant barrier within TCPD both pre and post context provision; a result which is not found within the other two organisations. Interestingly, TCPD highlighted more in this sub category after context information was provided than they did before which suggests that their increased understanding as a result of the context information made them aware of governance issues which may hinder successful implementation. It was highlighted that the context information has helped professionals understand the CPTED framework; however, the organisation highlighted institutional restrictions regarding partnership working and the lack of services provided by regional corporations. P1M Land Use Planner highlighted *“what still bugs me is if the regional corporations are responsible for controlling all these agencies, why is nothing done. The lighting, the pavements and things, they rarely make any positive changes, I don’t know if it’s a lack of knowledge or funding or what. Nobody actually sits down and coordinates these things”*. It was also suggested that there was still uncertainty as to how this could be integrated into the planning process due to the lack of wider agency involvement. Institutional restrictions placed upon planning departments or in fact any Government department was beyond the scope of this PhD. What was important however was that the proposed frameworks helped professionals to recognise that the institutional restrictions within their organisations restricted the work they could do and the partnership working that was needed to effectively implement CPTED.

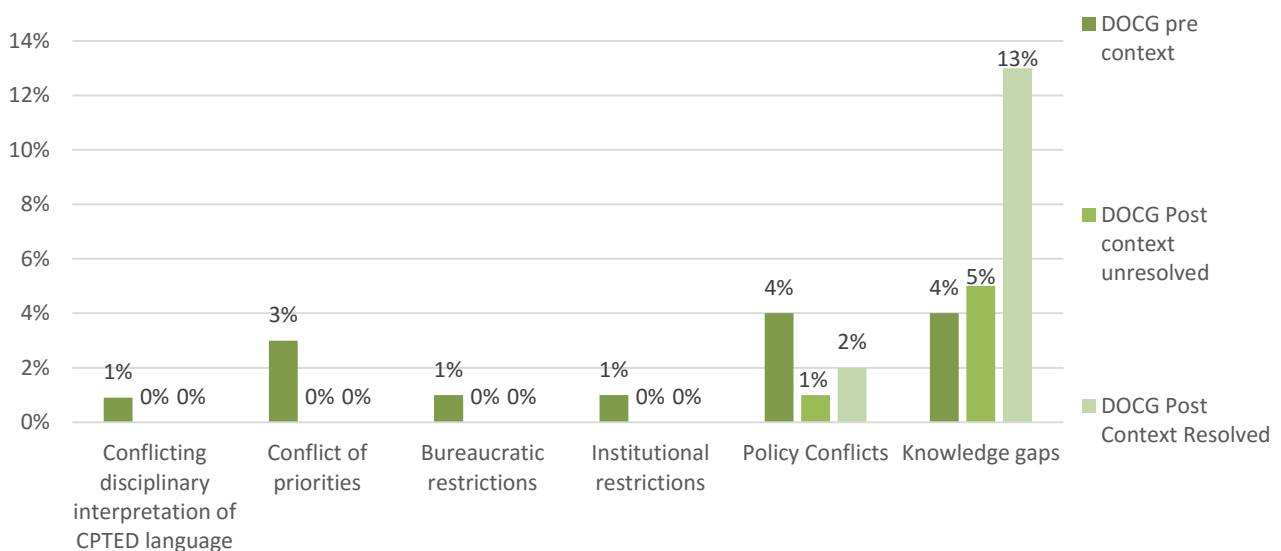
Conflicting priorities was less significant within the TCPD focus group than previous sub categories but it was noted that such conflicts highlighted in the pre context focus group were not evident after

context information had been provided. A general consensus of feedback suggested that increased knowledge of TCPD as the regulators of planning and urban design means that there is more chance of transferring knowledge and best practice to other built environment stakeholders. P12F Town Planner, highlighted *“In terms of ensuring regulation, I think if we put in a clause or condition which specifies how specific designs are used. For example, open space, we could tack on and encourage open spaces to be in specific areas to encourage natural surveillance and maximise on residential amenities. Now that we know why open space is important and what impact it can have other than just providing nice places for people to use we can incorporate this into our regulations”*. These recommendations suggest that in light of the information provided TCPD were able to make recommendations of amendments to current practices so that the issues identified could be resolved.

12.2.2.2: DOCG

Knowledge gaps was also most significant amongst DOCG both pre and post context provision although the context of the barriers varied (see chart 12.9).

Chart 12.9: DOCG Conflicts in Multi-Disciplinary working specific to CPTED



As discussed in chapter ten, pre context barriers were particularly associated with a lack of social context knowledge, lack of knowledge retention due to poor training and poor evaluation and measurement methods due to lack of social context. Post context unresolved barriers relating to knowledge gaps highlighted the need for education to enforce knowledge transfer and also suggested

that a lack of knowledge remains post context provision in reference to the existing awareness of social context and sustainability. P5M CPDA commented *“I think the contextual information is very important but I am already aware of the importance of designing out crime for sustainability. We always ensure that the design specifications we implement are sustainable, that is why we have the standards we do”*. This comment, in reference to the use of standards for ensuring design specifications for crime prevention are sustainable, suggests a remaining lack of awareness for the impact of broader social conditions on the longevity of crime prevention design since crime prevention standards do not currently consider social conditions and specifically focus on doors and locks, windows, lighting and general security (ACPO 2015). Another point was also raised in support of this claim when P4F CPDA, suggested that *“we always try to provide insight to the background analysis we do on crime rates but the links aren’t always clear to them [developers]”*. By referring to analysis of crime rates as the background analysis conducted to provide context to crime risk in a proposed development area, this highlights the idea that social context analysis does not go beyond that of basic crime analysis and therefore does not consider broader social factors which impact upon crime and the quality of life.

Unresolved knowledge gaps increased slightly post context provision which was surprising given the position of CPDA’s as experts in the field. This reinforces earlier suggestions that conflicting guidance and knowledge between CPTED stakeholders causes confusion and other broader implementation barriers. CPDA’s operate within the remit of SBD guidance (See ACPO SBD 2014); it is assumed based on observations of DOCG consultations during a pilot study (See Appendix E) that there is little scope for flexibility beyond the required SBD standards. Introducing a concept which focuses extensively on the evaluation of the social environment and resident’s perceptions of safety has evidently increased knowledge gaps amongst this group of professionals and therefore indicates that it may be more difficult to change the mind-set of professionals in the crime prevention field than it would be in other disciplines with less prior knowledge. The standardised process for SBD demonstrates a potential barrier to implementing the CPTED framework in practice and policy. It has taken several years for SBD to get a statutory position in the planning process. It is unlikely that

significant advancements to planning policy and legislation will be made that will be dependent on extra resources and potentially prolonged planning processes to ensure the required level of analysis.

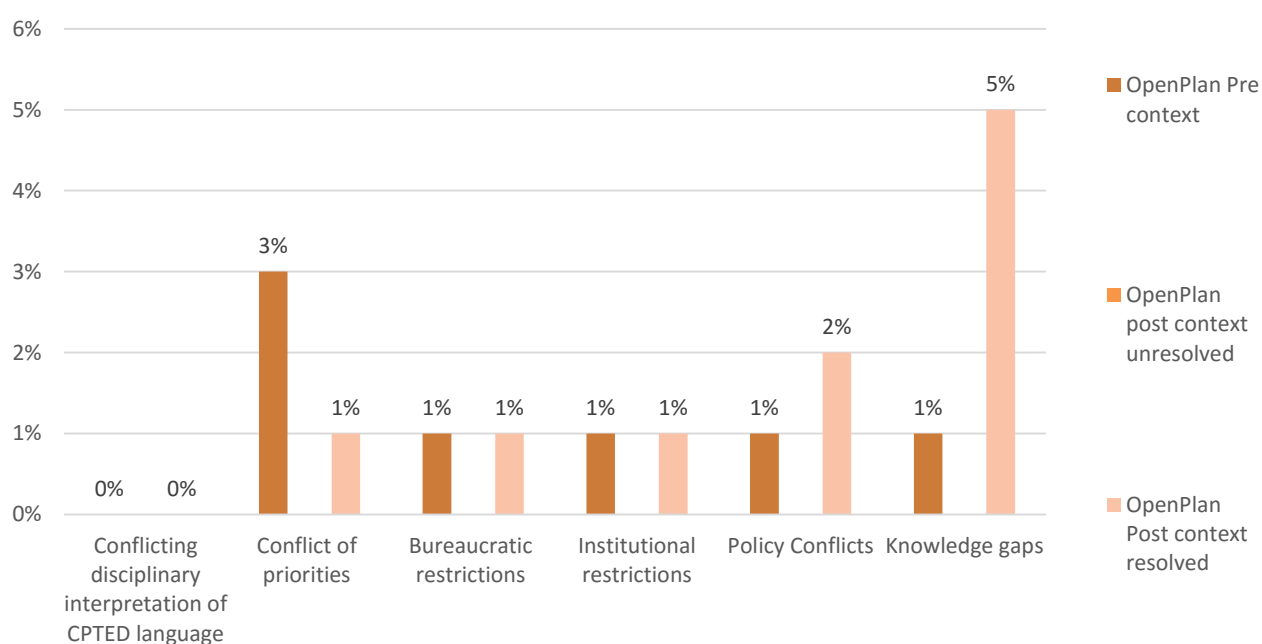
The second most significant barrier amongst DOCG is **policy conflicts**. Pre context barriers largely reflected CCTV legislation and that the diversity and conflict of guidance reduces engagement from CPTED stakeholders. Post context provision, unresolved policy conflicts decrease fourfold and there are more resolved barriers than unresolved. The context of these barriers suggests that in developing countries current policies do not support the required level of governance for effective and thorough CPTED planning and that a review of the planning system is required to regulate building control. Such major barriers would inevitably be an obstacle in CPTED planning, however if these issues are recognised by professionals who have the power to influence policy development, there is likely to be positive improvements towards a more regulated and controlled planning system which can more easily integrate CPTED planning and consideration of wider social context.

Conflicting priorities was an interesting sub-category for the DOCG (although the value was minimal pre context provision), there were no conflicting priorities identified post context which assumes that initial issues identified were reduced by an increased social awareness. Initial pre context barriers largely related to financial constraints and how profit exceeds safety in terms of developer's priorities. Whilst it is assumed that this issue would remain, professional feedback regarding improved regulation and policy development and suggestions that understanding of CPTED by all stakeholders could be improved through education and engagement, may be considered to alleviate this conflict although this is only a speculation.

12.2.2.3: OpenPlan

Like the previous two organisations, **Knowledge gaps** were also the most significant category to emerge from the focus groups, particularly the final focus group post context provision. Interestingly, these barriers were positive in that they were considered to be resolved issues or positive feedback from the group (See chart 12.10).

Chart 12.10: Openplan Conflicts in Multi-Disciplinary working specific to CPTED



Whilst minimal, pre context barriers suggested that CPTED was overtly focused on target hardening principles and that there was a lack of knowledge on the variation of target hardening measures. This was a group response and all participants shared this knowledge gap suggesting a misconception of CPTED amongst built environment professionals which may largely be a result of experience and reflection of SBD principles in UK planning applications. Post context provision there were no unresolved knowledge gaps put forward however the improvement of knowledge was expressed on several occasions, hence the increase to 5%. The context of this feedback was important in that participants felt the information significantly improved their understanding and ability to apply CPTED. P1M Town Planner, highlighted that *“The area I had most difficulty previously was actually*

identifying situations, whether it be design or the functioning of the environment. With this context information I am now able to analyse situations and say oh yes, I can see why that would create fear, or I can see why people would change their behaviour". This was also confirmed by P3M Architect, who stated *"I definitely understand a lot more about CPTED now. This information is very informative in terms of the evidence and theory behind designing out crime and it makes you understand why certain factors impact people in different ways"*. Whilst the context information had clearly been impactful for this organisation, suggestions were forthcoming about the way in which context information can help develop knowledge of wider CPTED stakeholders. P4M Urban designer, suggested *"If this knowledge was built into the way in which we are taught in training we would have a better appreciation of the relationships and impacts of different spaces on people's behaviour and perception of an area"*. P2F Community engagement officer reinforced this point by stating *"I think if this type of CPTED information was built into training and education for our professions it would reduce the feeling of it being a tick box situation and maybe help change mind sets"*. These comments suggest that the proposed model for analysing the social context of proposed development areas is vital not only for increasing professionals understanding of the relationship between design and crime but also for improving engagement from planning professionals.

Another category which increased post context provision was **policy conflicts**, although again, the numbers were minimal and all feedback post context was positive rather than unresolved barriers. Pre context barriers highlighted a disconnect between local and central government as the main issue restricting effective CPTED integration, particularly in that political agendas were subject to continuous change and the current guidance for designing out crime did not always support this. Feedback post context with regards to policy conflicts indicated that the information provided helped professionals to understand the CPTED principles and the relationship between design and crime more thoroughly and something which could easily be integrated into sustainable development policy. P1M Town Planner highlighted *"I've got a much better feeling of the potential for design and maintenance measures in tackling crime and anti-social behaviour, more than what I got from the standard designing out crime manuals which to me I feel is a lot more limited in its scope. This could*

easily be integrated into the work we do". Such feedback suggests that the model for evaluating social context has potential for a number of benefits such as improved knowledge transfer, more sustainable policy development and increased stakeholder engagement. That being said, these benefits rely entirely on a significant policy shift to ensure that implementation of CPTED principles is compulsory in the planning process. Providing a suitable solution to enforce and regulate the use of CPTED in practice is beyond the scope of this PhD however significant developments have been made through the provision of two transferable framework tools to help enable this process.

The last remaining category considered significant in terms of variation pre and post context is **conflicting priorities**, similar to that of DOCG although there was positive post context feedback this instance and like DOCG there were no negative/unresolved issues. Similar to the other organisations, conflicting priorities identified by Openplan pre context particularly related to crime and safety vs aesthetics and costs which participants considered to reduce engagement from CPTED stakeholders. Post context feedback was interesting as the comments put forward regarding conflicting priorities were classified as negative although resolutions were present. Participants highlighted that crime is not a priority for developers, as was discussed in the pre context focus group. The context of this suggested that the red tape involved in CPTED planning is not considered to increase the financial value of a development. P4M Urban Designer, suggested that *"for a private sector developer they don't have a passion for creating great places but they also don't appreciate the profitability of actually creating great places. I think this type of information could help them though"*. This feedback suggests that whilst the issue of conflicting priorities does remain, a contributing factor is likely to be due to a lack of knowledge regarding the impact of crime prevention which is considered to be improved through more contextualised knowledge on issues impacting crime and social sustainability. This realisation was only reached following context provision, again indicating an improvement in knowledge.

12.3: Conclusion

This chapter has reported on the focus groups conducted with a range of built environment professionals in order to explore the impact that local context information has on professionals understanding of CPTED and their ability to make informed decisions for CPTED implementation. Results indicated variations in the impact of context information between organisations although generally overall, the information was seen to impact positively upon professionals understanding of CPTED and their informed decision making.

Findings obtained from the TCPD focus group generated interesting results, having a reduced number of barriers post context provision but increase in the number of institutional restrictions. Feedback suggests this was a result of an increase in knowledge of CPTED in practice which subsequently made professionals aware of the required governance structured needed to sustain CPTED planning. As an organisation operating from central Government, TCPD highlighted that their biggest remaining barrier was the lack of partnership working and a disconnect between central Government and municipal corporations. It is also anticipated that all Government organisations would be faced with the same challenges if the appropriate legislation is not in place to enforce responsibility, such as in the UK with the Crime and Disorder Act 1998. CPTED relies on effective partnership working across disciplines, yet the reality of partnership working, particularly in a circumstance that does not enforce regulation is inherently problematic. Difficulties such as ineffective communication, poor information sharing, language barriers, conflicting resources, timelines and processes are typical issues that may restrict effective partnership working to mention just a few.

DOCG had similar results in terms of impact although knowledge gaps were found to increase post context provision. These barriers derived mainly from the researcher's interpretation of particular comments made regarding social context analysis by CPDA's. On a number of occasions professionals argued that context evaluation is already conducted through crime analysis and the standards enforced by SBD ensure that communities are sustainable. Given the context of the research conducted in this thesis and the focus on broader social conditions for evaluating sustainability and social context, it is argued that the concept of sustainability and social context has been misinterpreted

by CPDA's which may be a result of such defined protocol for SBD consultation. Other conclusions were drawn to suggest that private organisations such as planning consultants are limited in CPTED knowledge and engagement with other stakeholders, although the results from OpenPlan suggest that increased context analysis may positively impact upon this issue. In the UK, increasing social engagement before CPTED planning takes place will be difficult. This may be because SBD is engrained in current planning legislation and does not explicitly consider such social factors, nor does the UK Government have the resources or funding available to do so.

Results from OpenPlan were most significant in highlighting a dramatic decrease in barriers pre and post context provision where no unresolved barriers were identified in the second focus group. A number of resolved issues were however identified which was considered to be a result of the flexibility and scope for private organisations to consider different approaches which are not bound by bureaucratic and institutional constraints. OpenPlan highlighted on many occasions that the context information provided had significantly improved their knowledge and understanding of CPTED and that they consider this information to be important for improving training for planners and architects and the impact this would have on engagement in the planning process. The organisation explicitly stated that this level of context information would have profound impacts on sustainable development policy. P5, urban designer highlighted *"when we looked at the CPTED framework and then listened to the information which actually derived from a whole other concept, the connections were just screaming out at you. It was all about crime in reference to the CPTED principles but I could see how it was embedded with sustainable development and other planning principles. This is something we are currently lacking in sustainable development practice"*. Indications based on these results suggest context information also has a significant impact on private planning organisations which would potentially otherwise be considered by Government organisations such as TCPD and DOCG as those most opposing of CPTED principles. Evidence in this chapter demonstrates that in terms of flexibility and innovation, private planning consultancies are realistically less restricted to consider CPTED in practice. In reality however, crime prevention is not a priority concern for private planning organisations, unless incentivised to reduce crime by the Government. It is therefore naïve to assume

that just because planning consultants *can* incorporate CPTED (with the correct guidance), they *will*. More rigorous legislation is needed in the UK to make it a statutory requirement for all planning applications to do a formal crime risk assessment. In Greater Manchester significant improvements have been made through use of the Crime Impact Statements that require all planning applications to formally analyse the impact that their development may have on crime. Whilst this is a significant step forward, this thesis argues that the factors explored in this impact assessment do not consider the complexity of the physical and social environment and the impact this can have on crime and the perception of crime, as well as the overall quality of life.

12.4: Synthesis of Part E

Part D demonstrated the importance of generating context information to test its impact on professionals' interpretation and application of the CPTED concept. It also discussed that the model for social context analysis can successfully identify a range of data on the physical and social environment through community engagement which impacts crime, fear and the quality of life of communities. This information was synthesised and provided to professionals to help them consider crime risk in the area to provide insight as to the type of contextual information which can arise from use of the model. The final focus groups conducted in part E suggest that this information is impactful in many ways, particularly regarding improving knowledge gaps of the relationship between design, crime and sustainability; improving engagement with built environment professionals and improving policy development and integration into sustainable development practice. Part E of the research has therefore indicated that by rethinking the basis of crime prevention measures through consideration of social sustainability indicators, existing barriers in CPTED planning may be reduced and a more sustainable, integrated and context specific approach to crime prevention in the built environment is possible.

CHAPTER 13: Discussion and Conclusion

The last five decades have seen vast developments in the crime prevention resulting from the work of influential authors such as Jacobs (1961), Newman (1971; 1996) and Crowe (2000). CPTED originated in a multi-disciplinary environment, transcending fields of architecture, urban design, criminology, psychology, sociology and more; and in doing so, became subject to emerging and ongoing problems throughout the history of its development. For a concept that relies significantly upon multi-agency partnerships within a multi-disciplinary field, the operationalisation of the CPTED concept has been subject to a significant amount of conflict and barriers to effective implementation. The current notion of CPTED in the UK is delivered through Secured by Design in which Crime Prevention Design Advisors (CPDA's) consult with local authorities and built environment professionals on designing out crime through planning and urban design. In the UK consideration of crime in planning is based on a statutory footing since the Crime and Disorder Act 1998 was passed, however in other parts of the world there is no such regulation in place.

This PhD commenced with a basic appreciation that CPTED had inherent difficulties and a call by Ekblom (2011a, b) suggested it was in desperate need of reconsideration. The overall aim of this PhD was therefore to improve and update the CPTED concept. To ensure that this potentially overwhelming task was based on sound evidence the PhD required an open mind to explore the CPTED field in an emergent process. This allowed for a holistic overview of the current threats facing CPTED and an evaluation of which were feasible to explore within the available timeframe of this PhD.

The literature review in chapter three provided the foundation from which the methodological approach could be developed. A synthesis of key developments demonstrated the inherent difficulties which have emerged along the way. Beginning with its early theoretical development and moving towards the operationalisation of the CPTED concept, findings suggested that academic knowledge on CPTED was incomplete before it was put into practice and early evaluations of its operationalisation

(See Kaplan et al 1978; Bell & Young 1978; Betchtel 1978; Bickman et al 1978; Kohn et al 1978; Pesce et al 1978) suggested that there were underlying practical issues that were likely to be ultimately problematic. It was also found that that CPTED is largely design focused and rarely considers the social context of crime risk or the way in which fear and perception can alter the behavioural response of local communities (see chapter three section 2.2). This thesis proposes that failure to reduce such issues will undoubtedly result in unsustainable CPTED initiatives and reduced engagement from stakeholders involved in CPTED planning. From a sustainable development perspective, crime prevention initiatives that are not ‘needs led’ and do not adapt to the social context of a place are unlikely to contribute positively towards sustainable community development.

Emerging from the review was the issue of communicating and translating CPTED knowledge, and issues of stakeholder engagement. Such issues were predicted during early demonstration projects in the late 1970’s to be a risk to future implementation (See Kaplan et al 1978; Bickman et al 1978). The literature suggested that guidance for stakeholders was diverse and conflicting which highlighted barriers to engagement, as well as conflicting demands and priorities amongst stakeholders (see chapter three section 2.6 and 2.7).

The review also highlighted an underlying theme of sustainability, now a contemporary factor for debate in the CPTED field (see Poulsen 2013; Glasson & Cozens 2010; Marzballi et al 2011).

Fundamental here is the inherent link between crime prevention and socially sustainable communities but relevant indicators from which to analyse communities and incorporate crime prevention into sustainable development practice and policy are lacking. In a field that depends on solid multi agency working, transferability is essential for integration. If CPTED is not disseminated in a language that transcends the boundaries of crime prevention into a concept that is attractive to a diversity of audiences, there is little chance of successful implementation or engagement.

The scope of CPTED goes beyond just preventing crime, and if this can be illustrated in a way that is understood by professionals, improvements from initial engagement to successful implementation and long term benefits for crime prevention and the overall quality of life can be achieved. With a solid

understanding of the issues currently faced in the field, the researcher had insight to potential themes to be explored in further detail. Because of the volume of key issues identified in the field, Part A systematically explored the CPTED knowledgebase to confirm that the issues chosen for further exploration were most robust and important for improving the concept overall.

13.1: Key findings and implications

13.1.1: Confirming the main problems

Early stages of the research provided an original contribution to knowledge in the CPTED field since no study has ever explored the intricate relationships that form the knowledge disseminated from academia into the CPTED field. Results confirmed that the key issues most reliable in terms of evidence and robustness were that CPTED did not translate well between professional stakeholders; that engagement and partnership working was poor; that social context was largely absent from CPTED planning and that there required a more formalised link between crime prevention and sustainability. These issues are inherently linked. For example, the transferability of CPTED knowledge and stakeholder engagement are related because current guidance does not provide adequate information for CPTED planning which is a cause for disengagement by built environment professionals with already limited time and resources (See Linden 1990; Schneider and Pearcy 1996; Ekblom 1997). The lack of social context and sustainability were also related since CPTED initiatives that do not consider the social context of the environment and inherent risk to crime and fear are considered to be less sustainable in crime reduction effects. Broader contextual issues relating to fear and perception of the environment were also identified as important factors in evaluating sustainable communities (Cozens 2008). These findings provided the basis of the developments towards improving the CPTED concept in this thesis.

13.1.2: Proposing solutions

Having identified the main problems, the thesis began to explore the potential cause of communication and collaboration issues by analysing the key source of CPTED information; the

CPTED framework. Despite being the most recognised tool for obtaining information on CPTED it is suggested by Ekblom (2009; 2011b) to be conflicting and a potential cause of confusion. Textual analysis revealed that the CPTED framework was extremely diverse and conflicting not only in terms of the terminology used but also in many framework versions that lacked a theoretical direction. The CPTED framework is an important tool for knowledge transfer from academic research to practice and this research confirmed that the knowledgebase available to and used by professionals in the field was a potential source for misinterpretation of underlying goals, confusion and subsequent disengagement of professionals in the planning process.

In recognition of the conflicting guidance disseminated from academia, a framework reconstruction carried out in chapter six overcame many of the issues found in existing CPTED frameworks. These particularly related to the diversity of CPTED frameworks and inconsistencies in terminology and definitions, with minimal evidence of underlying theory. It is acknowledged that within such a diverse and complex field, varied guidance may suggest flexibility and innovation of standard practice; however, a level of core detail is required to ensure that knowledge can be transferred and interpreted consistently by a diverse audience. Inconsistent frameworks are also often a result of the CPTED concepts being adapted to particular contexts. This then increases the risk of frameworks which were developed for one area being applied in another area with different contexts and subsequent risks.

The analysis explored the theoretical foundations of all concepts and accompanying definitions found within the CPTED knowledgebase. Findings confirmed that three main theories were underlying the CPTED framework; Routine Activity Theory (Cohen & Felson 1979); Rational Choice Theory (Cornish & Clare 1985); and Broken Windows Theory (Wilson & Kelling 1982); although the detail provided in many of the concept headings did not make these foundations explicit. Cozens (2015) confirms that “*sound theoretical foundations are important for CPTED and evaluating CPTED because these help explain how and why CPTED reduces crime*” (2015:11).

The reconstruction process used theory to build and restructure the CPTED framework. The analysis identified the most well-known principles, namely Formal Surveillance, Informal Surveillance, Image

Management/Maintenance, Activity Support, Target Hardening and Boundary Definition. A new interpretation was developed here by theoretically grouping the six principles into the three concepts of Surveillance, Positive Reinforcement and Access Control; with an overarching goal of Territoriality. Each of the three concepts had individual goals which when implemented together, collectively contributed towards increasing territorial behaviour and ownership within communities. The identification of *operational* and *preparatory* tasks was also demonstrated to be of importance in the restructuring of the CPTED framework. Preparatory tasks represent the physical components of the CPTED concepts through design and other management processes and the operational tasks represent the required response to the environment in the form of human behaviour. The notion of operational tasks significantly highlighted the importance of social context within CPTED planning and the need to consider factors which may prevent the public from responding with the required behaviour, whilst also delivering needs led interventions. In the current field of CPTED there is no process for analysing social context which reduces the ability to identify aspects of the physical or social environment which may restrict communities from taking ownership and exerting territorial behaviour. Findings from this part of the research demonstrated that a structured process for exploring social characteristics and the sustainability of a community is currently missing from the CPTED arena.

At this stage of the research, whilst significant advancements had been made in the field through restructuring and relabelling the CPTED framework, what was still missing in terms of language transferability was an understanding of what was currently used **in practice** and if this guidance reflected the academic knowledgebase. A taste of what was currently available to and used by professionals in the field gave insight into the transferability of academic research into practice as well as an indication of professionals' understanding and interpretation of the concepts proposed in academia (including those within the proposed framework from chapter six). Whilst professional responses only provided a snapshot of knowledge within the field, results did have an international focus and suggested that there has been and currently still is a gap between research and practice knowledge in this field. Guidance documents put forward from professionals bore little resemblance

to the knowledge disseminated from academia and very few documents provided information on preparatory and operational components of the CPTED concepts. This confirmed that professionals are extremely likely to become disillusioned with the ultimate aim of CPTED strategies; also engagement was likely to be low since any misunderstanding could potentially enhance conflicting priorities inherent in multi-agency collaboration.

In terms of professional understanding of CPTED terminology however, initial results suggested that the structure and theoretical foundation of the proposed framework developed in chapter six was understood by stakeholders. What was now important was to explore the possibility of incorporating a social component for analysing context within CPTED planning so that initiatives could be both sustainable and needs led; and that understanding the relationship between the environment and human behaviour could be improved amongst professionals.

Since CPTED began in the early 1970s, it has been frequently observed that negative social conditions of communities can reduce the efficacy of CPTED initiatives (e.g., Jeffery 1971; Newman 1973; Mawby 1977; Crowe 2000; Merry 1981; Taylor 2002); and the importance of context and its relationship to sustainability has been reinforced in earlier parts of the thesis. Therefore, chapter eight explored the concept of social sustainability and identified the key parameters for analysing the context of local communities. The intention of exploring the concept of social sustainability was not to identify specific characteristics, but rather conceptual indicators which can guide engagement with communities to identify how the indicators impact on crime, fear and the overall quality of life. CPTED relies on sustainable communities for longevity in crime reduction effects; and sustainable communities rely on effective crime prevention measures so not to cause social disorganisation and out migration.

These findings were a significant step forward in the CPTED field since current approaches to exploring social context through Second Generation CPTED were considered to be detached from First Generation CPTED, and environmental design. These concerns were supported by Reynald

(2011) who argued that Second Generation CPTED needed to be clarified and enhanced. Cozens (2015) also confirmed that to date, “*the effectiveness of Second Generation CPTED has not been empirically tested*” (2015:13). Analysing social context analysis through the concept of social sustainability therefore provided a revolutionary approach and lay the foundations for rethinking the basis for crime prevention strategies in future CPTED planning; whilst also ensuring longevity in crime reduction as well as improving sustainable development practice overall.

13.1.3: Testing the impact

Key findings emerged from early parts of the thesis which laid the foundation for empirical analysis conducted in the latter parts of the research. The thesis proposed a reconfigured framework for CPTED and a concept model for community engagement to identify characteristics of the environment. Part D of this thesis empirically explored the transferability of the proposed framework and the proposed indicators of social sustainability to test the impact on professional knowledge and CPTED planning. Exploring the transferability of the proposed CPTED framework in various geographic locations increased the integrity of the results and improved the foundations for further improvements in the field. Since few studies have explored CPTED in the developing world context, Trinidad and Tobago represented a blank canvas from which to explore the concept.

Key findings from Part D pre context provision confirmed that the language and structure of the proposed CPTED framework were relatively well understood by professionals with few communication barriers identified. Of the communication barriers which were highlighted, these particularly related to positive reinforcement concepts which are considered to have more of a social element in that they largely reflect the perception of communities and signals that reduce fear. Interestingly, confusion mainly came from Crime Prevention Design Advisors (CPDA's) who specialise in crime prevention in the built environment. This is considered by the researcher to be a reflection of current SBD practice being largely security focused through certification specifications and less attention paid to people's fear and perception of the environment. As an organisation, the DOCG focus group confirmed some issues raised earlier in the thesis, particularly regarding the

guidance available to professionals, and diverse and sometimes conflicting knowledge. DOCG are controlled by the Association of Chief Police Officers (ACPO) and funded by the UK Government. They represent a body of crime prevention specialists who regulate crime prevention design in the built environment through Secured by Design standards. Participants from this group had the most difficulty in interpreting the language and theory of the proposed CPTED framework which reinforces the argument from chapter four that CPTED principles have not translated well into practice. These findings may suggest that current crime prevention practice in the UK does not consider in sufficient depth the socially ascribed components of CPTED, particularly regarding how design can impact the perception and fear of communities. However, provision of social context altered DOCG participants' perception of the CPTED principles. After context information had been provided to professionals, responses indicated that current practice by CPDAs was fundamentally flawed in terms of the pre planning analysis. A consensus of feedback regarding social context analysis, evaluation and sustainability of crime prevention initiatives indicated that some CPDA's do not recognise the inherent links between crime and the wider impact on sustainable communities and how these links can be used as alternative variables for evaluation; nor would they have the resources to do so. It seems that the standard practice engrained in SBD professionals may blinker any scope for advancing crime prevention approaches and integrating crime prevention principles and the necessary pre planning social context analysis into the broader remit of sustainable development.

13.1.4: Existing barriers and recommendations

This thesis confirms that a major policy shift is needed internationally to support multi-agency working and to regulate crime prevention in the built environment from central to local government organisations. In the UK, policy change is likely to be more difficult due to current crime prevention practice being bound by SBD standards and certification which has many financial and institutional incentives for compliance; although 'social sustainability' is far from considered in this process. Recent changes within the Government in the UK have the potential to alleviate this issue. When this PhD began, SBD was owned by ACPO but in April 2014, ACPO was officially disbanded by

Government which previously constituted an organisation with its own budget, headquarters and staff base; therefore, having the ability or develop a not for profit service within its organisation. In replacement of ACPO is the National Council for Police Chiefs which do not have this remit within its constitution and therefore the future of SBD may be considered uncertain. There may therefore be an opportunity for change, and time may be of the essence for introducing something more substantial within planning divisions if the link between crime and sustainable development is made more obvious. Openplan have demonstrated that context information is impactful to organisations which have the flexibility to adapt to innovative approaches and are not bound by bureaucratic and institutional restrictions. The two government led organisations (TCPD and DOCG) were still restricted by bureaucratic and institutional restrictions which limited effective partnership working for enforcement and management processes. This reinforces the need for policy shift since the knowledge, theory and evidence is there to suggest that considering crime risk through the remit of socially sustainable communities can have significant impact on planning decisions and subsequently improving sustainability and the overall quality of life.

Existing barriers for CPTED implementation do remain, particularly regarding the lack of Government resources, lack of education/training for built environment professions and CPDA's, inconsistent guidance manuals, and poor governance structures that create loopholes to avoid any responsibility for crime prevention in the built environment. These barriers are unfortunately beyond the scope of this PhD but the need for further research into how these barriers can be reduced is needed. The proposed CPTED framework and model for evaluating social context is considered to be a potential step forward towards regulating guidance since it does not attempt to provide prescriptive solutions but rather guide practitioners on what themes need explored in order to identify specific characteristics of each crime prevention situation. What is valuable about the framework proposed is that it intentionally remains conceptual. This is so that when built environment professionals use this framework, they are forced to consider social context in order to generate practical design solutions.

In terms of education and training, the proposed developments in this research could be used to increase awareness of social context and that crime prevention initiatives need to be 'needs led' and

on a site specific basis. CPDA John Brown from South Wales Police confirms that current training and guidance for crime prevention practitioners is inadequate and fails to deliver the underlying theory needed for professionals to understand the expected outcome of initiatives (Personal communication 2013). Improving training and education in this sense would develop flexibility and innovation in crime prevention approaches which is vital on a site specific basis. The required education for planning professionals and the current training that is carried out was beyond the scope of this PhD. However, improving the use of CPTED in practice could benefit from an overview of all training and accreditation programmes to analyse exactly what is covered and how this could be improved to enhance the professionals understanding of crime and its relationship to the environments that they create.

A significant change is needed in the way in which crime prevention is currently considered both in the UK and Internationally. Cozens (2014) argued that *“It is no longer sufficient just to know about generic CPTED solutions. It is necessary to move away from cookbook approaches and instead, think more carefully about the particular characteristics of each specific situation”* (2014:13). Currently there is no comprehensive approach that guides the way in which people consider particular characteristics of each specific situation, nor do people know what is important for analysis. The proposed model for evaluating social context provides conceptual guidance to structure engagement with communities and identify exactly what characteristics need analysed, so that context specific issues are raised and prescriptive solutions can be developed and implemented. With that in mind, without the correct governance structures in place for enforcing crime prevention, proposed initiatives are unlikely to be maintained or managed in the long run. More rigorous legislation is therefore required beyond what is currently adhered to in the Crime and Disorder Act 1998; legislation that specifies exactly what partnerships need to be in place and ensures that implementation and cooperation is on a statutory and compulsory basis. A change in legislation of this nature is likely to have a positive impact on the resources available to local Governments for enforcing such initiatives once the greater benefits are understood. Whilst this would be an ideal situation, this thesis has not taken into consideration, beyond feedback from built environment professionals, how the proposed

framework and context analysis could conflict with other policies in built environment practice.

Unfortunately, this analysis was beyond the scope of this PhD and could benefit from further analysis in the future. Whilst feedback from professionals in this research did not identify any obvious conflicts, the possibility still exists that in reality, making use of the CPTED framework and the social sustainability framework compulsory in the planning process may restrict other planning policies or codes of practice. What is argued however is that crime is a naturally degenerative characteristic and its prevention should be a priority for all planners and built environment professions and failure to consider this may potentially restrict other planning policies.

Implications of this research could be substantial if taken on board and if the correct governance structures and legislation were in place to support it. The proposed framework demonstrates a holistic catchment of all CPTED knowledge disseminated from academic research which is grounded in theory and evidence and transferable to professional organisations across a range of disciplines.

Results from this PhD confirm that the framework alone is insufficient for guiding practical implementation due to a lack of context knowledge which specify current risks and barriers to effective crime reduction. The proposed model for evaluating social context concisely demonstrates the inherent relationship between crime and sustainability; that sustainable crime prevention initiatives are required in order to achieve truly sustainable communities and that sustainable communities are required to achieve sustainable crime reduction. Both concepts must work in concert to achieve the shared goal of improving the quality of life. It has also perhaps been noticed that acceptance of a solid definition has been avoided in this PhD due to the inherent underlying difficulties and issues which were to be explored. However, given the findings of this study which confirm that the future basis of CPTED is to develop beyond basic crime prevention and focus toward broader sustainability efforts, the following recent definition by Cozens (2014) is accepted.

Contemporary CPTED is therefore considered to be *“a process for analysing and assessing crime risks in order to guide the design, management and use of the built environment (and products) to reduce crime and the fear of crime and to promote public health, sustainability and quality of life”*

(Cozens 2014: 21). This definition goes beyond focusing on design and crime but rather considers the

broader issue of risk as was proposed in this this research. It also has the additional focus of promoting sustainability which has been absent from other previous definitions. The definition is considered to be a good way towards improving the basis from which crime prevention initiatives are derived.

Whilst this research has provided significant contributions to knowledge through the development of a holistic framework for CPTED and a model for analysing social context pre CPTED planning there are some issues regarding the reality of these developments being incorporated into current or future planning policy and practice. As previously discussed, crime prevention is not a priority for planning professionals. The level of partnership working that currently exists between the police and Government planning departments is so limited (particularly outside the UK), that effective governance and information sharing would reduce the effectiveness of CPTED in practice.

Training and accreditation for planners, architects and urban designers does not currently consider crime in enough detail to ensure that they could suitably analyse crime risk at the pre-planning phase. Because the proposed framework is holistic and does not provide practical design solutions, the reality of this being used in practice is limited. This is because the Government would need to invest time and resources into training planning professionals and regulators of the built environment to understand the complex relationships between the environment and human behavior. The CPTED framework and the social sustainability model are proposed as long term solutions for crime prevention, to help towards the development of sustainable communities. In many parts of the world, crime and the subsequent degeneration of communities is so extreme that quick fixes are needed. The amount of legislative and policy developments that would be required to embed a 3rd generation approach to CPTED is such that investment by the Government would likely be difficult to obtain.

In the UK, the Government have invested significant time and resources into Secured by Design which in many parts of the UK has had a very positive impact. It is unlikely that, even given the recent changes that SBD faces following the abolishment of ACPO, the Government would adopt an entirely new way of thinking and invest even more time and resources into ensuring that crime

prevention experts had sufficient resources available to conduct this level of analysis before implementation.

That being said, the value of social context analysis and the importance of such a holistic framework is not diminished and in countries that do not currently consider crime prevention in the built environment, this research could provide the foundations for significant, long term policy developments in planning and building control.

13.2: Contribution to knowledge

A contribution to new knowledge has been achieved in many aspects throughout this research.

According to the Quality Assurance Agency for Higher Education (QAA) (2012), doctorates should only be awarded to students who have demonstrated:

- the creation and interpretation of new knowledge, through original research or other advanced scholarship, of a quality to satisfy peer review, extend the forefront of the discipline, and merit publication
- a systematic acquisition and understanding of a substantial body of knowledge which is at the forefront of an academic discipline or area of professional practice
- the general ability to conceptualise, design and implement a project for the generation of new knowledge, applications or understanding at the forefront of the discipline, and to adjust the project design in the light of unforeseen problems
- a detailed understanding of applicable techniques for research and advanced academic enquiry (QAA: 2012).

In the creation and interpretation of new knowledge, Trafford & Lesham (2008) confirm seven attributes which define a contribution to new knowledge:

- Application of conventional research instruments in new fields of investigation
- **Combining disparate concepts in new ways to investigate a conventional issue**
- **Creating new understanding of existing issues**

- **Design and application of new field instruments in contemporary settings**
- Extending the work of others through a replication of their original methodology
- **Identification of new and emerging issues worthy of investigation and explanation**
- Originality in using the work of others.

This PhD achieves four of the seven attributes (in bold) in which only one is needed to define a contribution to knowledge in PhD research. The contribution to new knowledge began with the results from chapter four: *A Critique*, which systematically reviewed a close to exhaustive sample of academic material in the CPTED field and explored the complex networks to confirm their integrity to identify new and emerging issues of CPTED worthy of further investigation. The results of this identified *new and emerging issues worthy of investigation and explanation*.

Further exploration identified a significant gap between the knowledge base of professionals and academics in the field and a significant lack of social context analysis in CPTED planning. By refining and updating the CPTED framework and highlighting the important links between crime and social sustainability and how this could be used for a more holistic evaluation of social context, *concepts were successfully combined in new ways to investigate more conventional issues*. Both the CPTED framework and the social sustainability model were tested in a developing country with no previous engagement with CPTED or situational crime prevention; therefore, *providing a new tool in a contemporary setting*. Following the improvements proposed to the CPTED framework, empirical analysis with built environment professions explored current barriers in the field before and after social context provision; thereby creating a *new understanding of existing issues* and identifying areas which still require further changes.

The field study generated empirical evidence of the transferability of CPTED and its dependence on the social sustainability model for context evaluation. Proposing an updated framework as a tool to facilitate CPTED planning based on a holistic synthesis of academic contributions is a major contribution to knowledge since it not only combines disparate concepts in new ways to investigate a

conventional issue but it bridges the existing gap between research and practice by delivering a practical and empirically sound framework for considering and applying crime prevention within the broader remit of social sustainability. It is also extremely contemporary in its approach since sustainable development is high on the agenda for the national spatial development frameworks, strategies and plans for many parts of the world. This research therefore contributes substantially to new knowledge across many fields.

13.3: Methodological reflections

For a research project that spans the best part of four and a half years, it was inevitable that looking back with the knowledge acquired today, things could have been done differently. Whilst it is considered that the methods used are sound and of great impact, the researcher's knowledge and approach to academic research has advanced dramatically since the PhD began in 2011 at a time when the future and direction was unknown and there was a level of uncertainty as to what exactly would be found out. With that in mind, there are aspects of the research which are potentially limited due to methodological weaknesses; most of which are however inevitable. In the same chronological order adopted in this thesis, the following section will discuss some limitations to the research and potential improvements which could have been made.

Starting with chapter four, *the CPTED critique*, which represents the first stage of analysis; the systematic exploration of networks behind the CPTED criticisms was the first of its kind in academic research. The variables used to explore the research network therefore depended entirely upon decisions by the researcher since there were no prior studies of this nature to suggest what was important in terms of exploring bias in academic output. Initiative was required to decide upon potential variables which may cause bias within the literature. The principles of Actor Network Theory provided guidance in terms of thinking critically about the content of communication and how it can be determined by the relationship between those that disseminate information. The analysis was on a global scale and also required data from authors perceptions spanning five decades. Alternative methods such as surveys would therefore be impossible and academic literature was considered the

best archive that documents such information. The variables for analysis were decided upon by the researcher partly from reflection on some criticisms of CPTED; particularly that CPTED was tested on a narrow range of scales, that it had weak empirical analysis and that it was largely conducted in Western countries. This confirmed scale, methodology, and researcher and study location to be variables for analysis as well as additional variables such as author discipline and criticism which the researcher considered important given the multi-disciplinary nature of CPTED. The theoretical foundation and philosophy of this research methodology, as well as the absence of any previous studies which have explored these issues is justification that the methodological approach as well as the variables chosen for analysis were the most suitable for obtaining important information about the integrity of CPTED criticisms proposed in the literature.

Chapter seven which explored the professional knowledgebase had a low response rate to questionnaires as discussed in the analysis section. Due to the global scale of the research in this section, it was anticipated that the response rate would be high since the questionnaire targeted special interest forums via the internet. Unfortunately, only 42 responses were received providing documents which professionals use for crime prevention guidance, therefore the research only obtained a snapshot of the professional knowledgebase. Obtaining a representative sample of documents would have been difficult since it would require responses at least from every country in the world and even then, there would still be diversity in the guidance available within each country. Obtaining a holistic representation of professional knowledge was therefore considered an unrealistic task and it was accepted that only a snapshot could be obtained. Of the responses that were received, a large proportion came from the UK and USA which could cause potential bias in the results since many of the documents being analysed in this section would therefore be from western countries. However, it is argued that CPTED is still largely a Western concept and few studies have been conducted in other countries around the world. The responses are therefore a reflection of reality in practice. An interesting factor from participant responses which could be considered for further analysis to explore differences in practice between varied geographic contexts would be to explore the guidance

documents used by professionals in the less developed countries such as the Philippines and see if or how this differs to Western countries.

Chapter eight, which explored social sustainability and its relationship to crime was an important chapter for this thesis since it created the first model of its kind for exploring the social context of communities pre CPTED planning. The model derived from a review of literature on social sustainability, however due to time constraints and the potentially large volume of published material on this topic, the sample used in the analysis was not exhaustive. It may therefore be argued that the model which was created in this section is not holistic since it did not capture a representative sample of academic input on social sustainability. It is however argued that this thesis does not propose the model to be definitive and would recommend that further exploration on the identified indicators and the concept of social sustainability overall was carried out. The model does however demonstrate that social sustainability and CPTED are entirely dependent on each other and that risk to crime, fear and the quality of life should be considered within the broader remit of sustainability rather than being narrowly focused and limited to aspects of crime and victimisation.

Concerning the collection of data which derived from the model for evaluating social context proposed in chapter eight, characteristics of the physical and social environment were identified solely from community participant responses. Using responses by community participants may be considered a weakness in the validity of the methodology since the statements made by participants may not be factual. It is however strongly argued in this thesis that the environment is functioned by human behaviour and if the public have fear or a negative perception towards specific characteristics then this will impact the way they use the environment and the human operation required to sustain the intended outcome of CPTED design may be hindered. What is taken on board is the potential for community participants to miss something important during engagement in the research; something which impacts on their perception and use of public space. Whilst community engagement was triangulated with three separate groups in order to reduce the risk of missing important issues, future research would advise that community engagement is conducted in phases throughout the planning process. This would enable initial responses to be put considered, potential risk to be analysed and

CPTED solutions to be proposed. If communities were involved in this process, there is more chance that other factors which contribute to fear would be highlighted as plans progressed and feedback was sought before implementation.

This leads onto a more prominent issue regarding the whole methodological approach to this PhD fieldwork. As well as the St Augustine Education City project, initial plans were to analyse the transferability of the proposed CPTED framework and model for evaluating social context during a live planning process in Trinidad. It was planned to observe a team of built environment professionals implement the CPTED framework during the planning phase of a mixed use development on a 300-acre site in Trinidad. Unfortunately, due to delays in approval by the Environmental Management Authority, this development did not go ahead within the anticipated time frame for the PhD which therefore meant that the research was solely focused on the St Augustine Education City project. If this development had gone ahead in time, the research would have been significantly stronger since professionals would be realistically planning and designing based on the CPTED framework and subsequent context information. This would have generated more realistic findings since the barriers identified would be physical barriers which occurred during implementation rather than just anticipated barriers based on professional perception of the planning process. Provisions were in place for TCPD to implement CPTED to their plans for the St Augustine Education City in light of the absence of the other case study, however the time frame for the planning process did not allow for it to be incorporated into this PhD research. Future work would therefore recommend physical implementation to assess the barriers on a more practical level; this will be discussed further in section 4 of this chapter.

With regards to the data obtained on the study area, it has been discussed already that the role of context analysis in this PhD was solely to assess its impact on professional's interpretation and understanding of the CPTED framework and not for the purpose of analysing crime risk in the study area. With that in mind, the process of analysis and its inherent limitations have been discussed in great detail regarding the uncertainty of primary and secondary data and processes to reduce error. What has not been discussed however is the potential uncertainty in the interpretation process from

participant responses to definitive data for analysis. As discussed in chapter eleven and 12, focus groups with community participants identified characteristics of the environment which participants perceived to impact their feelings of safety, use of the environment and overall quality of life. In this respect, the researcher ensured that sufficient detail was obtained to identify exactly what it was about those characteristics which incited fear or changed the way they used public space. In every instance the interpretation process by the researcher was linked to theories which supported the potential impact this may have on communities and justified the interpretation process from participant responses to a definitive data collection protocol. This reduced uncertainty and strengthened the integrity of the analysis however this process must be made clear so future research which may consider the use of such model for evaluating social context through community engagement does not miss out this important theoretical synthesis.

There were inherent limitations with the data collection process carried out to generated context information as discussed in the Chapter three and briefly in Appendix I. This particularly related to poor engagement by Government officials, poor engagement by communities and poor data collection processes by the Police Service and other Government organisations which made local analysis difficult. Whilst this may be considered a limitation or an ethical issue if the context information were to be considered in a live planning process, the quality of the data obtained here and the subsequent information provided to professionals would have no impact on their ability to understand and apply the CPTED framework. If uncertainties in the context information are present, this would not directly influence its impact on professionals understanding of CPTED which was the objective of this research. Also the information generated was of the highest quality possible given the circumstances of uncertainty in the data and therefore the quality of the information is considered to be a reflection of reality if this were a real life planning process.

Scale is another potential issue which may be seen to limit the research although this is considered on one hand to be an unavoidable issue and on the other, not to be an issue at all. Although initial developments of CPTED between chapters four and ten were on a global scale, and triangulation of its impact were considered both nationally and internationally; the empirical analysis conducted for

context analysis was only considered at a meso scale of a town/suburb. This decision reflected requirements by TCPD whose St Augustine Education City Project was conducted at this scale, although several micro projects could have been considered if the meso scale was deemed to be problematic by the researcher. The chosen scale was considered the most appropriate due to previous observations from studies analysed in chapter four which suggested that many crime prevention initiatives are implemented at a micro scale, particularly in the UK and therefore conducting this analysis at a meso scale of specific buildings, streets or estates rather than whole towns, this would add another dimension to the research which has potential to advance the CPTED concept. Potential limitations with conducting empirical analysis at this scale, particularly regarding community engagement were that the issues identified were rather generalised and tended to reflect issues which were across the whole of study area although there were some specific micro locations highlighted. If analysis was conducted at a more micro scale, perhaps at street level, the issues highlighted may have been more specific and detailed. However, this is not considered to be an issue for the integrity of the PhD research since the conceptual nature of the model for evaluating social context means that community engagement can occur on any scale and the model can also be explored at street level as well as nationally; although it must be noted that the larger the scale, the more generalised and less specific the identified characteristics for analysis will be.

One final issue worthy of discussion is the context of professional focus groups which were repeated pre and post context provision. It may be considered a limitation that the final focus group was replicated with the first focus group and used to measure impact, however this was done so that a bar could be set in the first focus group and therefore any change in perception in the second focus group was likely to be a result of the context information provided. An alternative approach had been considered whereby the identified issues in the first professional focus group were revisited in the final focus group to see if they had been resolved, reduced or remain, however this would therefore be more of an interview method which is deemed less effective in exploratory analysis. The focus group method was important for the final engagement with professionals to maintain an exploratory nature and to reduce potential bias or influence on the participant's responses through directly highlight

issues already mentioned. The method used allowed for new issues to emerge post context provision which had not previously been identified and therefore had the potential to identify issues which emerge as a direct consequence of context information or the improvement in professional knowledge of the CPTED process. This method also allows for more flexibility in participant feedback.

13.4: Suggestions for further research

Working in a chronological order from the early parts of the thesis onwards; further work around the temporal changes of CPTED criticisms would complement findings from chapter four. There was a brief introduction to the types of changes which have occurred in the perception of researchers in the CPTED field and potential influences of this change e.g. policy changes. However, if we are to learn from the past and prepare for the future, it may be a worthwhile task exploring exactly how CPTED has developed over time in response to various social, political and economic pressures, especially in the new age of terrorism and crime types diverging different ‘environments’; cybercrime for example. CPTED has slowly broadened its horizons and is now considered a vital component of wider sustainability efforts; there is scope for the concept of ‘environment’ to revert back to Jeffery’s original contributions and consider more contemporary environments in a fast changing society.

This PhD focused specifically on four main criticisms that the research suggested were most justified and pertinent to future developments of the concept. Other criticisms were however touched upon such as CPTED being based on a weak empirical evidence base; CPTED creating a fortress society (although it is suggested that findings from this research would alter this perception); that CPTED is top down (again, this research provides a potential remedy for this); and also the lack of evaluation with regards to CPTED projects. To date, there are very few studies which have evaluated the longevity of CPTED interventions, except perhaps SBD focused evaluations by Armitage (1999) and Brown (1991). The Westinghouse demonstrations in the late 1970’s were the first of its kind, however the recommendations and potential warnings issued clearly had little impact since many of the issues were found to exist today. It is therefore proposed that a comparative study is carried out: one to evaluate the sustainability of a CPTED initiative implemented more than 10 years ago by analysing

characteristics beyond crime statistics and considering more social variables as proposed in this PhD (see chapter nine); another would be to use the proposed framework and model for evaluating social context from this PhD within a real development process, taking note of social context indicators before implementation and conducting an evaluation of the same indicators in future years to see which of the two initiatives have been more sustainable. Findings from this PhD have confirmed that social context information helps professionals understand and apply the CPTED principles, but further research is needed to confirm its potential impact on sustainable communities in the long run.

Before advancements are made for practical implementation of the proposed CPTED framework and model for evaluating social context, further work is advised on the indicators of social sustainability. As discussed in section three of this chapter, the analysis conducted to explore the concept of social sustainability did not use a representative sample of literature and therefore has potential to have missed some important indicators. Further work is therefore sought to increase the sample used and confirm or add additional indicators where necessary to the current model. Also, in reference to the model, each of the indicators identified could be explored individually in more detail to confirm its relationship to crime and CPTED and potentially develop sub indicators/principles for a more detailed engagement with community participants. While participants in this study were able to understand the indicators and easily identify characteristics of this theme which they considered to impact their quality of life, more focused and less conceptual categories would allow for a more thorough discussion with communities.

Some final factors for consideration are the current guidance and training incorporated to degrees of architecture, planning and urban design fields would be a worth task to gauge what crime prevention knowledge professionals are expected to have and how this could be improved. If CPTED is to transcend into such professionals and be considered standard practice, its presence in curriculums for education is essential. Also, a deeper analysis of the existing barriers identified post context provision would be beneficial to see how these could be improved in the future. Issues remaining particularly related to policy conflicts, lack of partnership working and poor governance between central and local

Government. Because these issues do remain, a thorough evaluation of its impact and potential remedies is required so that CPTED can be as transferable, as efficient and as sustainable as possible.

13.5: A final word

It seems appropriate, given the proportion of my life that this PhD has consumed over the past four and a half years to conclude this thesis on a personal note by explaining how I have developed personally and professionally throughout this journey. I began this PhD in 2011 at the age of 21 having obtained a 1st Class degree with Honours in the field of Crime Science. The first six to nine months consisted mainly of getting my head around what a PhD actually was, how I was ever going to get through it and what my life would be like nearing completion (if I ever made it that far). At that time, I took the changes in my stride being oblivious to the formidable task I had ahead of me, but looking back I realise just how little I knew then and how far I have now progressed as a researcher and as an individual since I started. In the first few chapters I was diagnosed with a rare genetic disorder affecting my liver, as well as other “auto-immune” ailments which did unfortunately impact my ability to work and concentrate for long periods of time. By the fifth and sixth chapters I had turned into an over-determined and somewhat obsessive workaholic, possibly in light of my illness which I was determined not allow to hold me back in any way. By chapter eight I became a module tutor for the Crime Science BSc programme at Northumbria; whilst this was an absolute honour and amazing experience to have had, it did make me realise that any future involvement in academia would go no further than research, which I found to have developed even more passion for! Once my temporary post as a lecturer came to an end, I was faced with the daunting task of conducting international fieldwork in Trinidad and Tobago that I was less than prepared for. This experience opened my eyes to the context of a different world and one which some people live in fear from day to day. It made me grow into an adult and realise the importance of the research I was engaged in and the real life impact it could have on the daily lives of communities. Towards the end of my time in Trinidad I lost one of my best friends unexpectedly; an experience which I would not wish upon anyone. But ultimately, this made me even more determined to make her proud and finish this PhD

being healthy and happy. By the last few chapters I had returned to the safety of my home where I remained for 18 months working from my Grandparents study where I committed many hours to the pleasurable experience of writing up my thesis. This taught me dedication, self-motivation and that between 4am-5am can be my most productive hour of the day! I am now concluding this PhD on a somewhat emotional note by saying what an honour it has been to spend so much time on such an interesting research project to which I have had sole responsibility and control over. I have developed something which I am very proud of and I am overwhelmed that this process has reached an end, although I would quickly refuse the opportunity for it to be repeated! I am now ready to begin my career as a Research and Insight Manager in a new part of the UK, put my skills and experience into practice and positively impact the lives of communities which I soon found to be a personal and professional aim of mine.

Appendix A

Documents used in Chapter four content analysis

Date	Author1	Author2	Author3	Paper
2007	Patrick Parnaby			Crime Prevention Through Environmental Design: Financial hardship, the dynamics of power and the prospect of governance
2011	Garner Clancey			Crime Risk Assessment in NSW
2010	Ed Book	Richard Schneider		Crime Prevention Through Environmental Design: CPTED 40 years later.
2011	Paul Ekblom			Deconstructing CPTED and Reconstructing it for Practice, Knowledge Management and Research
2010	John Glasson	Paul Cozens		Making Communities Safer from Crime: An undervalued element on impact assessment
2008	Paul Cozens	Michael Thorn	David Hillier	Designing out Crime in Western Australia: a case study
2008	Pilar Mora			Towards a Strategy of Crime Prevention Through Environmental Design in the City of Masaya, Nicaragua
2009	Tom McKay			Behavioural Based Design
2011	Miguel Saraiva	Paulo Pinho		A comprehensive and accessible approach to crime prevention in the planning and design on public space

2012	Garner Clancey	Murray Lee	Darren Fisher	Crime prevention Through Environmental Desing (CPTED) and the New South Wales crime risk assessment guidelines: a critical review
2012	Darren Fisher	Awais Piracha		Crime prevention through environmental design: a case study of multi agency collaboration in Sydney, Australia
2011	Rachel Armitage	Leanne Munchuck	Michelle Rogerson	It looks good but what is it like to live there? Exploring the impact of innovative housing design on crime
2004	Rachel Armitage			Secured by Design: An investigation of its history, development and the future role in crime reduction
2009	Paul Ekblom			Redesigning the Language and Concepts of Crime Prevention Through Environmental Design
2006	Yvonne Haigh			Promoting Safer Communities through Physical Design, Social Inclusion and Crime Prevention through Environmental Design: a developmental study
2007	Rachel Armitage			Sustainability versus safety: Confusion, Conflict and Contradictio in Designing out Crime
2008	Adam Sutton	Adrian Cherney	Rob White	Environmental Prevention
2002	Richard Schneider	Ted Kitchen		Planning for crime prevention

2002	Ralph Taylor			CPTED, Yes, No, Maybe, Unknowable and All of the above
2008	Paul Cozens			Crime Prevention Through Environmental Design
1987	Mario Pimiobini			Crime Prevention through environmental design
1989	Wendy Sarkissian			Safe Houses: the role of residents and the community of users in environmental crime prevention
1993	Melvin Tucker	Bill Starnes		Crime Prevention Through Environmental Design: The tallahassee model
1994	Timothy Crowe	Dianne Zahm		Crime prevention through environmental design
1995	Randall Atlas			The blast, the repercussions and a special report on defensible space
2000	Phill Topping	Tim Pascoe		Countering household burglary through SBD scheme: does it work?
2002	Ted Kitchen			Crime prevention and the british planning system
2004	Manolya Kavakli	Kamelya Kavakli	YiFan Gao	Crime prevention through environmental design in Virtual Reality
2004	Peter Olasky			Crime Impact Statement

2005	Caroline Davey	Andrew Wooton	Rachel Cooper	Design Against Crime: Extending the reach of crime prevention through environmental design
2005	Jayne Klein			Statutory and Non statutory approaches to Crime Prevention Through Environmental Design
2005	Richard Schneider			Introduction: Crime Prevention Through Environmental Design, Themes, Theories, Practice and Conflict
2002	Joowon Kim	Youngki Park		The CPTED Evaluation Model using Space Syntax Theory
2009	Karina Landman			Boundaries, Bars and Barricades: Reconstructing Two Approaches to Crime Prevention in the Built Environment
2004	Patrick Parnaby			Designs of Risk: Crime Prevention Through Environmental Design, Social Control and the Prospects of Professionalism
2005	Paul Wilson	Bud Wileman		Developing a 'SafeCity' Strategy based on CPTED research: an australian case study
2007	Lisa McCauley	Anne Opie		Research about the use of Crime Prevention Through Environmental Design (CPTED) by Local Authorities in New Zealand
1972	Thomas Moriarty			Crime, Commitment and the responsive bystander

1974	James Hackler	Kwai-Yiu Ho	Carol Urquhart-Ross	The Willingness to Intervene: Differing Community Characteristics
1977	Paul Stanley			Crime Prevention Through Environmental Design: A review
1978	Imre Kohn	Lewis Hanes		Citizen involvement in law enforcement and criminal justice
1978	Michael Musheno	James Levine	Denis Palumbo	Television surveillance and crime prevention
1980	Paul Lavrakas	Dan Lewis		The conceptualisation and measurement of citizens crime prevention behaviours
1981	Pat Mayhew			Crime in Public View: Surveillance and Crime Prevention
1981	Sally Merry			Defensible Space Undefined
1987	Dennis Rosenbaum			The theory and research behind neighbourhood watch
1988	Dennis Rosenbaum			Community crime prevention: a review and synthesis of the literature
1995	Marcus Felson			Those who discourage crime
1996	Eric Phillips			Crime Prevention Through Environmental Design in the Bancroft Neighbourhood
1996	Steve Schneider	Patti Pearcey		The theory and practice of crime prevention through environmental design: a literature review
2003	Jake Desyllas	Phillip Connolly	Frank Hebbert	Modelling Natural Surveillance

2008	Paul Cozens			Public Health and Potential Benefits of Crime Prevention through Environmental Design
2009	Danielle Reynald			Guardianship in Action: Developing a new tool for measurement
2009	Danielle Reynald	Henk Elffers		The Future of Newmans Defensible Space Theory: Linking Defensible Space and the Routine Activities of Places
2010	Danielle Reynald			Translating CPTED into Crime Prevention Action: A critical examination of CPTED as a tool for Active Guardianship
2012	Meghan Hollis-Peel	Danielle Reynald	Brandon Welsh	Guardianship and Crime: an international comparative study of guardianship in action
2011	Megan Hollis-Peel	Danielle Reynald	Brandon Welsh	Guardianship for crime prevention: a critical review of the literature
1979	James Mayo			Effects of urban street forms on suburban neighbouring behaviour
1976	Thomas Repetto			Crime Prevention Through Environmental Policy: A critique
1978	Edward Pesce	Imre Kohn	Howard Kaplan	Crime Prevention Through Environmental Design Final Report Phase 2 and 3
1983	R E Moffatt			Crime Prevention Through Environmental Design- A management perspective

1989	Paul Geason	Susan Wilson		Crime Prevention Through Environmental Design
1994	David Dillon			Fortress america: more and more of us are living behind locked gates
1997	Patrick Donnelly	Charles Kimble		Donnelly & Kimble 1997- Community Organising, Environmental Change and neighbourhood crime
1998	Roger Tijerino			Civil Spaces: A critical perspective of defensible space
2005	Renaud Le Goix			Gated Communities: Sprawl and Social Segregation in Southern California
2005	Karina Landman	Susam Liebermann		Planning against crime, preventing crime with people not barriers
2008	Karina Landman			Gated neighbourhoods in South Africa: an appropriate urban design approach?
2001	Paul Cozens	David Hillier	Gwyn Prescott	Defensible Space: burglars and police evaluate urban residential design
1977	Howard Kaplan	Larry Bell	Avishany Dubnikov	Crime prevention through environmental design: process case studies report
1993	Rob White			Youth Conflict over Urban Space
1986	Susan Smith			Crime and Housing: Managing the risks
1983	Sydney Brower	Kathleen Dockett	Ralph Taylor	Residents Perception of Territorial Features and Perceived Local Threat

1983	Barbara Brown	Irwin Altman		Territoriality, Defensible Space and Residential Burglary: an environmental analysis
1988	Janice Normoyle	Jeanne Foley		The defensible space model of fear and elderly public housing residents
1996	Graham Steventon			Defensible Space: a critical review of the theory and practice of a crime prevention strategy
2002	Phil McCamley			Minimising Subjectivity: A new risk assessment model for CPTED
2008	Linda Nubani	Jean Wineman		The Role of Space Syntax in Identifying the Relationship Between Space and Crime
2011	Paul Ekblom			Guest editors introduction
1989	Julia Macdonald	Robert Gifford		Territorial Cues and Defensible Space Theory: The Burglars point of view
1991	Barry Poyner			Situational Crime Prevention in Two Parking Facilities
1981	Barbara Brown	Irwin Altman		Territoriality and Residential Crime: a conceptual framework
1978	Richard Gardner			Design for Safe Neighbourhoods
1986	Paul Lavrakas	James Kishmuk		Evaluating CPTED: The portland commercial demonstration project

1993	C Ray Jeffery	Diane Zahm		Crime prevention through environmental design, opportunity theory and rational choice models
2002	Randal Atlas			The sustainability of CPTED: Less Magic, More Science
1986	Arthur Lurigio	Dennis Rosenbaum		Evaluation Research in Community Crime Prevention
1978	Leonard Bickman	Michael Maltz	Paul Lavrakas	Bickman et al 1978- The evaluation of law enforcement and criminal justice
2010	Paul Teedon	Tim Reid	Polly Griffiths	Evaluating Secured by Design door and window installations: effects on residential crime
2000	Carrie Casteel	Corrine Peek-Asa		The effectiveness of CPTED in reducing robberies
1997	Janet Frohman	Lewis Hanes	Imre Kohn	Crime Prevention Through Environmental Design
1981	Alan Booth			The built environment as a crime deterrent
1988	Randal Atlas			Just when you thought it was safe
1993	Lee Cuba	David Hummon		A place to call home: Identification with dwelling, community and region
2004	Bill Hillier			Can streets be made safer?
2007	Susan Smith			Design against crime? Beyond the rhetoric of residential crime prevention

1996	Matthew Robinson			The theoretical development of CPTED: 25 years of responses to C Ray Jeffery
1999	C Ray Jeffery			CPTED past present and future
1977	R I Mawby			Defensible Space: A theoretical and empirical appraisal
1990	Randal Atlas			Offensible Space: Law and Order Obstruction Through Environmental Design
1991	Randal Atlas			The other side of CPTED
1995	Janet Foster			The informal Social Control and Community Crime Prevention
2002	Paul Cozens	David Hillier	Gwyn Prescott	Defensible Space, Community Safety, The british city and the active citizen
2003	Randal Atlas			How are criminals using CPTED
2005	Afton Enger			Comparative analysis of urban design and criminal behaviour: a study of new urbanism and defensible space as they pertain to crime
1973	A E Bottoms			Review of Defensible Space
1973	Bill Hillier			In defense of space
1975	Dennis Roncek			Density and Crime: A methodological critique
1978	Victor Rouse	Herb Rubenstein		Crime in public housing

1989	Ralph Taylor	Stephen Gottfredson	Sidney Brower	The defensibility of defensible space
1989	Sheena Wilson			Vandalism and Defensible Space on London Housing Estates
2001	Paul Cozens	David Hillier	Gwyn Prescott	Crime and the design of residential property part 1
1977	Richard Titus			Crime Prevention Through Environmental Design: Some Topics for Evaluation
1986	Ralph Taylor	Stephen Gottfredson		Environmental Design and crime prevention
1990	Ronald Hunter	C Ray Jeffery		Environmental Crime Prevention: An analysis of convenience store robberies
2002	Sherry Plaster Carter			Community CPTED
2003	Jerry Ratcliffe			Suburb Boundaries and residential burglars
2005	John Minnery	Bill Lim		Measuring Crime prevention through environmental design
1976	Dennis Duffala			Convenience Stores, Armed Robbery and Physical Environmental Features
1983	Dennis Roncek	Antoinette Lobosco		The Effect of High Schools on Crime in their Neighbourhoods
1993	Douglas Perkins	Abraham Wandersman	Richard Rich	The physical environment of street crime: defensible space, territoriality and incivilities

1999	John Schweitzer	June Wookim	Julliette Mackin	The impact of the built environment on crime and fear in urban neighbourhoods
2004	Pamela Wilcox	Neil Quisenberry	Debra Cabrera	Busy places and Broken Windows? Towards defining the role of physical structure and process in community crime models
2008	Ling Hin Li			The physical environment and a sense of neighbourhood in residential communities in HongKong
1981	James Kushmuck	Sherri Whittemore		A Re-evaluation of Crime Prevention Through Environmental Design Programme in Portland Oregon
2002	Paul Cozens			Sustainable urban development and CPTED for the British City
2004	Paul Cozens	Tim Pascoe	David Hillier	Critically reviewing the theory and practice of SBD for residential new build housing in Britain
1978	Larry Bell	Nick Dah-Jyh		Crime Prevention Through Environmental Design
1979	Donald Appleyard			The environment as a social symbol
2011	Bonnie Grohe			Measuring residents perceptions of defensible space compared to incidence of crime
1979	Pat Mayhew			Defensible Space: the current status of a crime prevention theory

1995	Henry Cisneros			Defensible Space: Deterring Crime and Building Community
1998	Leam Craig			Crime by Design: An exploratory investigation
2007	Colin Rogers			Alley Gating: Theory and Practice- A perspective from urban south wales
2011	Danielle Reynald			Factors Associated with the Guardianship of Places: Assessing the Relative Importance of the Spatio-Physical and Sociodemographic Contexts in Generating Opportunities for Capable Guardianship
1994	Daniel Gilling			Multi Agency Crime Prevention in Britain: The problem of combatting situational and social strategies
2008	Severin Sorensen	John Hayes	Randal Atlas	Understanding CPTED and Situational Crime Prevention
2004	Gunter Stummvoll			Design Against Crime in Vienna: A feminist approach
2009	Gregory Saville			SafeGrowth: Moving forward in Neighbourhood Development
1999	Tim Pascoe			Evaluation of SBD in public sector housing
2000	John Parker			Safer Spaces and Places: reducing crime by urban design

1978	Dennis Dingemans			Evaluating Housing Environments for Crime Prevention
1980	Alan Wallis	Daniel Ford		Crime Prevention Through Environmental Design
1984	Stephanie Greenberg	William Rohe		Neighbourhood Design and Crime: A test of two perspectives
2004	Henry Shaftoe			Crime Prevention, Facts, Fallacies and the Future
2010	Xin Lin			Exploring the Relationship Between Environmental Design and Crime: A Case Study of the Gonzaga University District
1982	Stephanie Greenberg	William Rohe	Jay Williams	Safety in Urban Neighbourhoods
1979	Timothy Hartnagel			The perception and fear of crime
2001	Paul Cozens	David Hillier	Gwyn Prescott	Crime and the design of residential property- Exploring the perceptions of planning professionals, burglars and others
1990	Rick Linden			Crime Prevention and Urban Safety in Residential Environments
1996	James Lasley			Using Traffic Barriers to Design out Crime
2005	Paul Cozens	Gregory Saville	David Hillier	Crime Prevention Through Environmental Design: a review and modern bibliography
2000	Alejandro Del Carmen	Matthew Robinson		CPTED and Consumption Control in the US

Appendix B

Author and year of documents used for framework analysis in chapter five

Author and year
Bell and Young 1978
Bickman 1978
Kaplan 1978
Pesce et al 1978
Rouse and Rubenstein 1978
Wileman 1978
Wallis and Ford 1980
Kushmuck 1981
Moffatt 1983
Lavrakas and Kushmuck 1986
Piombini 1987
Atlas 1988
Geason and Wilson 1989
Linden 1990
Tucker and Starnes 1993
Crowe and Zahm 1994
Mills 1996
Phillips 1996
Schneider 1996
Feins et al 1997
Prevatt 1998
Tijerino 1998
Casteel and Peek-Asa 2000
Cozens 2000
Parker 2000
Mandelbit 2001
Cozens 2002
Katyal 2002
Shneider 2002
Mair and Mair 2003
Vann and Eaton 2003
Olasky 2004
Parnaby 2004
Shaftoe 2004
Stummovoll 2004

Cozens et al 2005
Davey et al 2005
Klein & Walker 2005
Wilson and Wileman 2005
Haigh 2006
Galuak et al 2007
McCauley and Opie 2007
Parnaby 2007
Schneider 2007
Ziegler 2007
Cozens 2008
Cozens et al 2008
Cozens 2008
Cozens 2008
Mora 2008
Sorensen et al 2008
Book and Schneider 2010
Glasson and Cozens 2010
Western Community Policing Institute 2010
Kajalo and Lindblom 2011
Lin 2010
Reynald 2010
Clancey 2011
Eklom 2011a
Eklom 2011b
Hashemi et al 2011
Izmail et al 2011
Kajalo and Lindblom 2011
Marzbali et al 2011a
Marzbali et al 2011b
Clancey et al 2012
Marzbali et al 2012
Rezaeifar et al 2012

Appendix C

Pilot Study Part B Section 3

A pilot questionnaire was distributed to a small group of professionals in the built environment field in order to assess if the questions were interpreted correctly and if the responses achieved the proposed research objectives. The initial plan was to provide the terms and definitions from the proposed CPTED framework and ask professionals to identify preparatory and operational tasks for each CPTED principle. The aim was to assess their understanding and interpretation of the principles theoretical position within the framework. Many of the responses from this were ‘unknown’ which suggested that the way in which the questionnaire was written was not familiar to participants. Based on this feedback it was suggested that analysis of principles found in the proposed CPTED framework would not be a true reflection of the variation of terms extracted from the academic knowledgebase and also that provision of the definition to accompany each principle would not help align academic principles with professional interpretation. In light of these findings the questionnaire was modified so that professionals were provided each key heading from the academic knowledgebase. They were also questioned on their familiarity and use of the heading in order to explore similarities between research and practice; as well as asking participants to align the concept heading with one of the proposed concept headings within the reconfigured framework. It was confirmed that data obtained from this analysis would allow the researcher to assess if professionals recognised the academic terms to be aligned with the proposed CPTED framework concepts, and if not, confirming their inconsistency and conflicting interpretation.

A sample of five questionnaires is included in this appendix to illustrate the type of responses and questions posed to participants.

Questionnaire Samples

Aim of the Research

Thank you for taking part in our study at Northumbria University, your response is greatly appreciated and valuable to our research.

Crime Prevention Through Environmental Design (CPTED) is a multi-disciplinary crime prevention approach involving fields of Environmental Criminology, Psychology, Architecture, Urban Planning and Design, and Behaviour Analysis. Its main premise is that environments within which we operate can influence behaviour and therefore deviant (criminal) behaviour can be reduced through environmental design. Although this has featured positively and negatively throughout decades of research, this study aims to evaluate if policies and frameworks used within practitioner fields reflect those in the theoretical literature.

In particular, previous studies have suggested significant terminology and framework confusion within CPTED literature which can lead to misunderstanding and confusion. However multi-disciplinary collaboration, integral to designing out crime, requires a common understanding of partner disciplinary approaches and underlying assumptions, indicating that such terminology and framework confusion can be damaging to the underlying goal of crime reduction. The objective of this research is to begin to understand and quantify such terminology confusion and present information for debate, discussion and consideration to practitioners, academics and policy makers.

Any response is valuable whether crime prevention is considered or not, as the research aims to evaluate the transferability of such frameworks between academic research and practice and identify whether such strategies are applied at all.

It must be stressed that all responses will be treated on a strictly confidential basis and anonymity will be maintained within any future publication. Information concerning participants will be kept securely by the research team and will not be disclosed to any third party. The results will not be used for any purpose other than academic publications. The research will not seek to change current policies or practice or disclose information about any individuals or practices.

If you are happy to take part in the survey, please complete the consent form below and the following survey questions. Should you have particular requirements regarding confidentiality or anonymity beyond the research undertaking above please complete the appropriate box of the participant consent form and feel free to discuss these with me.

Thank you for your time and assistance.

Megan McCabe,
*Post Graduate Researcher,
Faculty of Engineering and Environment
EBA206, Ellison Building,
Northumbria University,
Tel: (+44)191 2437944, Email:
megan.mccabe@northumbria.ac.uk*

Victoria Gibson,
*Post Graduate PhD Researcher.
Faculty of Engineering and Environment
Wynne Jones 201, Second Floor
Northumbria University
Tel: (+44) 191 2274311, Email:
victoria.gibson@northumbria.ac.uk*

Academic supervisor: Mr Derek Johnson, Senior Lecturer, Geography & Environment
dept.Email Derek.Johnson@Northumbria.ac.uk



Faculty of Engineering and Environment

RESEARCH PARTICIPANT CONSENT FORM

Name of participant	*****
Organisation	DESIGN FOR SECURITY , GREATER MANCHESTER POLICE
Researcher's name	Victoria Gibson
Title of research project/dissertation	The use of CPTED in professional disciplines
Supervisor's name <i>[Only if researcher is a student]</i>	Derek Johnson

Standard statement of participant consent (please tick as appropriate)*

I confirm that:

I have been briefed about this research project and its purpose and agree to participate* ☒

I have discussed any requirement for anonymity or confidentiality with the researcher** ☐

****Specific requirements for anonymity or confidentiality**

Signed



Date 07.01.13

Standard statement by researcher

I have provided information about the research to the research participant and believe that he/she understands what is involved.

Researcher's signatureVictoria Gibson.....

Date11/01/13.....

Section A

- 1) What is your field of work?

Designing out Crime in the planning and development industry

- 2) What is your current job title?

Consultant

- 3) Please summarise your job description below

To provide guidance to reduce crime and the fear of crime in the built environment by providing CPTED advice to developers, architects, planners and other building professionals.

To act as consultants to clients requesting best practice advice and to influence the design team on designing out crime.

To raise the consciousness of principle decision makers within the development industry.

To build and maintain a strong working relationship and effectively develop communications and contacts with senior professionals in the development industry.

Liaison with architects, planners and designers in respect of preliminary design advice.

Prepare Crime Impact Statements for public and private sector clients to be submitted as part of the planning application process.

To co-ordinate, examine and analyse building plans, development plans and planning briefs, and planning applications for building designs and developments, preparing reports and consultation documents and undertaking site visits and surveys as required.

Section B

This section aims to identify what, if any frameworks are in use within your profession. By Framework we mean a general set of concepts to understand and guide an overlapped crime prevention approach.

1. In your field of work, at what stage would you consider crime prevention?

All stages.

Design for Security engage with designers prior to planning submission. Supported by Greater Manchester Planning Authorities, we have introduced Crime Impact Statements, CIS, as a method of ensuring early intervention in major developments. A CIS is a required document to include in the submission of a major planning application in Greater Manchester.

We also respond to planning consultations and post decision through the condition compliance and through SBD applications.

From time to time we are involved in problem solving issues, which may have arisen with sites or buildings around the county, where there may be a design solution to crime and disorder problems.

2. What Crime Prevention policy/framework/guideline do you use or refer to, if any?(If non please state in space provided)

3.

**Secured by Design ‘New Homes’,
Greater Manchester Local Authorities UDP/SPD policies on designing out crime,
DCLG ‘Safer places’**

4. How do you use this policy/framework/guideline?

Sometimes refer to in advice/reports or simply to use as a reference point when compiling reports/ responding to consultations or assessing SBD applications

Section C

This Section aims to identify terms used to describe crime prevention matters and evaluate their importance between disciplines

- Q1. The table below shows common terms for Crime Prevention concepts found in CPTED. For each term please state:

- a) if you are familiar with the term in the context of crime prevention generally,
- b) if you use the strategy in your practice
- c) If you answer **Yes** in **both** column A and B please state which category you would place the crime prevention term in

Crime Prevention Term	A) Are you familiar with the term in the context of crime prevention? (Please delete as appropriate)	B) Do you use this term in your practice? (Please delete as appropriate)	C) Which category would you place the Crime prevention term in? (Please tick or highlight all categories that apply)
Activity support	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Motivation reinforcement	N	N	Surveillance Positive Reinforcement Access Control None of the above
Territoriality	Y	N	Surveillance Positive Reinforcement

			Access Control None of the above
Movement control	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Natural access control	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Formal organised surveillance	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Target hardening	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Defensible space	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Activity programme support	Y	N	Surveillance Positive Reinforcement

			Access Control None of the above
Territorial reinforcement	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Natural surveillance	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Maintenance	Y	N	Surveillance Positive Reinforcement Access Control None of the above
Information Provision	N	N	Surveillance Positive Reinforcement Access Control None of the above
Milieu	Y	N	Surveillance Positive Reinforcement Access Control None of the above
Territorial behaviour	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Real surveillance	Y	N	Surveillance

			Positive Reinforcement Access Control None of the above
Changes in the physical environment	Y	N	Surveillance Positive Reinforcement Access Control None of the above
Community building	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Surveillance of employees	Y	N	Surveillance Positive Reinforcement Access Control None of the above
Formal surveillance	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Broken windows	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Deflecting offenders	Y	Y	Surveillance Positive Reinforcement Access Control None of the above

Removing inducements to crime	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Signage and bans	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Activity placement	Y	N	Surveillance Positive Reinforcement Access Control None of the above
Activity location	Y	N	Surveillance Positive Reinforcement Access Control None of the above
Boundary definition	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Target protection	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Situational crime prevention	Y	Y	Surveillance Positive Reinforcement Access Control

			None of the above
Communitarianism	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Image	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Space Management	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Image Management	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Image Milieu	Y	N	Surveillance Positive Reinforcement Access Control None of the above
Target Hardening through security measures	Y	Y	Surveillance Positive Reinforcement Access Control None of the above

Image management and maintenance	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Quality environments	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Surveillance	Y	N	Surveillance Positive Reinforcement Access Control None of the above
Natural Informal Surveillance	Y	N	Surveillance Positive Reinforcement Access Control None of the above
Informal Surveillance	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Activity Generation	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Place Management	Y	Y	Surveillance Positive Reinforcement Access Control

			None of the above
Image Maintenance	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Maintenance of Surroundings	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Exterior Maintenance	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Available Control	N	N	Surveillance Positive Reinforcement Access Control None of the above
Reinforce Natural Kingdom	N	N	Surveillance Positive Reinforcement Access Control None of the above
Repair and Preservation	Y	Y	Surveillance Positive Reinforcement Access Control None of the above

Natural Supervision	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Social Activity Support	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Access management	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Access Control	Y	N	Surveillance Positive Reinforcement Access Control None of the above
Awareness of the Environment	N	N	Surveillance Positive Reinforcement Access Control None of the above
Environment	Y	N	Surveillance Positive Reinforcement Access Control None of the above
Environmental Quality and Sense of Ownership	N	N	Surveillance Positive Reinforcement Access Control

			None of the above
Image/Maintenance	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Image/Management	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Management and Maintenance	Y	Y	Surveillance Positive Reinforcement Access Control None of the above

Q2. Are there other terms that you use in your work to reflect issues of crime prevention through design of the environment that are not in the above table? (Please delete accordingly)

No

Q3.If you have answered Yes to Q2 please provide those terms with a brief explanation of their meaning:

Thank you for completing the questionnaire. If you need any further information about the research or would like to withdraw your contribution to the study please contact:

Victoria.gibson@northumbria.ac.uk

Questionnaire 2



Faculty of Engineering and Environment

RESEARCH PARTICIPANT CONSENT FORM

Name of participant	*****
Organisation	South Cambridgeshire District Council
Researcher's name	Victoria Gibson
Title of research project/dissertation	The use of CPTED in professional disciplines
Supervisor's name <i>[Only if researcher is a student]</i>	Derek Johnson

Standard statement of participant consent (please tick as appropriate)*

I confirm that:

I have been briefed about this research project and its purpose and agree to participate* ☒ X

I have discussed any requirement for anonymity or confidentiality with the researcher** ☐

****Specific requirements for anonymity or confidentiality**

Signed -----

Date 28th January 2013

Standard statement by researcher

I have provided information about the research to the research participant and believe that he/she understands what is involved.

Researcher's signature**Victoria Gibson**.....

Date**01/02/13**.....

Section A

4) What is your field of work?
Urban design
.....

5) What is your current job title?
Principal Urban Designer
.....

6) Please summarise your job description below
.....

- Liaise with developers and their agents/consultants on development proposals at pre-application stage and throughout the application process, including the discharge of conditions.
- To advise the Planning Policy team on the preparation of design policies for the LDF, assisting in the preparation of evidence statements of evidence and attending local inquiries as necessary, to achieve a high standard of townscape and urban design.
- Responsible for fulfilling the urban design district wide requirements including working in existing and newly established communities to promote the social, economic and general well being of residents in a quality environment.
- To lead on the drafting of area and subject based design policies, guidance and strategies, including design coding.
- To provide professional urban design advice on new development schemes for the Council.
- To contribute to task and topic based multi-disciplinary teams, including those with key development partners, to secure the implementation of high quality new development across the growth area.
- To lead the production and co-ordination of the Council's policies in relation to urban design issues in accordance with statutory requirements and the LDF in order to build vibrant communities and to deliver sustainable growth.
- To lead and participate in multi-disciplinary teams, ensuring effective consultation and engagement with elected members and local stakeholders, including residents, to secure the development of high quality built environment across the district with a specific focus

on the townscape quality at Northstowe, developing new settlement of Cambourne and in partnership with City Officers for the City Fringe extensions.

- Lead in the preparation of *area based* Strategic Design Codes as supplementary planning documents (to support the LDF & develop the Design Guide). These will include: overall built form and townscape, (inc. materials palette); neighbourhood character and appearance; town/urban centre character and appearance; and edge treatments; open space and landscape.
- Lead in the preparation of *subject specific* Strategic Design Codes as supplementary planning documents, including design strategies for: parking; architectural design (inc. landmarks; gateways) highway design; street furniture ; traffic calming schemes etc).
- Lead in the preparation of detailed Construction Design Codes and their development as supplementary planning documents.
- To provide expert design guidance to the service to critique new development schemes and planning applications across the district, attending and reporting to Joint Planning Committees as necessary.
- To give professional advice to local communities, particularly in relation to the impact of major new developments.
-

Section B

This section aims to identify what, if any frameworks are in use within your profession. By Framework we mean a general set of concepts to understand and guide an overlapped crime prevention approach.

5. In your field of work, at what stage would you consider crime prevention?

Masterplanning

6. What Crime Prevention policy/framework/guideline do you use or refer to, if any?(If non please state in space provided)
- South Cambridgeshire District Council's "District Design Guide: High Quality and Sustainable Development in South Cambridgeshire"
 - Secured by Design

7. How do you use this policy/framework/guideline?

Direction on approaching the design of safe and inclusive environments.

Section C

This Section aims to identify terms used to describe crime prevention matters and evaluate their importance between disciplines

- Q1. The table below shows common terms for Crime Prevention concepts found in CPTED. For each term please state:

- d) if you are familiar with the term in the context of crime prevention generally,
- e) if you use the strategy in your practice

- f) If you answer **Yes** in **both** column A and B please state which category you would place the crime prevention term in

Crime Prevention Term	A) Are you familiar with the term in the context of crime prevention? (Please delete as appropriate)	B) Do you use this term in your practice? (Please delete as appropriate)	C) Which category would you place the Crime prevention term in? (Please tick or highlight all categories that apply)
Activity support	N	N	Surveillance Positive Reinforcement Access Control None of the above
Motivation reinforcement	N	N	Surveillance Positive Reinforcement Access Control None of the above
Territoriality	Y	N	Surveillance Positive Reinforcement Access Control None of the above
Movement control	Y	N	Surveillance Positive Reinforcement Access Control

			None of the above
Natural access control	Y	N	Surveillance Positive Reinforcement Access Control None of the above
Formal organised surveillance	Y	N	Surveillance Positive Reinforcement Access Control None of the above
Target hardening	Y	N	Surveillance Positive Reinforcement Access Control None of the above
Defensible space	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Activity programme support	N	N	Surveillance Positive Reinforcement Access Control None of the above
Territorial reinforcement	N	N	Surveillance Positive Reinforcement Access Control None of the above
Natural surveillance	Y	Y	Surveillance Positive Reinforcement

			Access Control None of the above
Maintenance	Y	N	Surveillance Positive Reinforcement Access Control None of the above
Information Provision	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Milieu	N	N	Surveillance Positive Reinforcement Access Control None of the above
Territorial behaviour	N	N	Surveillance Positive Reinforcement Access Control None of the above
Real surveillance	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Changes in the physical environment	Y	N	Surveillance Positive Reinforcement Access Control None of the above

Community building	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Surveillance of employees	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Formal surveillance	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Broken windows	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Deflecting offenders	Y	N	Surveillance Positive Reinforcement Access Control None of the above
Removing inducements to crime	N	N	Surveillance Positive Reinforcement Access Control None of the above
Signage and bans	Y	Y	Surveillance Positive Reinforcement

			Access Control None of the above
Activity placement	N	N	Surveillance Positive Reinforcement Access Control None of the above
Activity location	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Boundary definition	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Target protection	N	N	Surveillance Positive Reinforcement Access Control None of the above
Situational crime prevention	N	N	Surveillance Positive Reinforcement Access Control None of the above
Communitarianism	N	N	Surveillance Positive Reinforcement Access Control None of the above

Image	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Space Management	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Image Management	Y	N	Surveillance Positive Reinforcement Access Control None of the above
Image Milieu	N	N	Surveillance Positive Reinforcement Access Control None of the above
Target Hardening through security measures	Y	N	Surveillance Positive Reinforcement Access Control None of the above
Image management and maintenance	Y	N	Surveillance Positive Reinforcement Access Control None of the above
Quality environments	Y	Y	Surveillance Positive Reinforcement

			Access Control None of the above
Surveillance	Y	N	Surveillance Positive Reinforcement Access Control None of the above
Natural Informal Surveillance	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Informal Surveillance	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Activity Generation	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Place Management	Y	N	Surveillance Positive Reinforcement Access Control None of the above
Image Maintenance	Y	N	Surveillance Positive Reinforcement Access Control None of the above

Maintenance of Surroundings	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Exterior Maintenance	Y	N	Surveillance Positive Reinforcement Access Control None of the above
Available Control	N	N	Surveillance Positive Reinforcement Access Control None of the above
Reinforce Natural Kingdom	N	N	Surveillance Positive Reinforcement Access Control None of the above
Repair and Preservation	N	N	Surveillance Positive Reinforcement Access Control None of the above
Natural Supervision	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Social Activity Support	N	N	Surveillance Positive Reinforcement

			Access Control None of the above
Access management	Y	N	Surveillance Positive Reinforcement Access Control None of the above
Access Control	Y	N	Surveillance Positive Reinforcement Access Control None of the above
Awareness of the Environment	N	N	Surveillance Positive Reinforcement Access Control None of the above
Environment	Y	N	Surveillance Positive Reinforcement Access Control None of the above
Environmental Quality and Sense of Ownership	N	N	Surveillance Positive Reinforcement Access Control None of the above
Image/Maintenance	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Image/Management	Y	Y	Surveillance

			Positive Reinforcement Access Control None of the above
Management and Maintenance	Y	Y	Surveillance Positive Reinforcement Access Control None of the above

Q2. Are there other terms that you use in your work to reflect issues of crime prevention through design of the environment that are not in the above table? (Please delete accordingly)

No

Q3.If you have answered Yes to Q2 please provide those terms with a brief explanation of their meaning:

Thank you for completing the questionnaire. If you need any further information about the research or would like to withdraw your contribution to the study please contact:
Victoria.gibson@northumbria.ac.uk

Questionnaire 3



Faculty of Engineering and Environment

RESEARCH PARTICIPANT CONSENT FORM

Name of participant	*****
Organisation	Intelligent Risks Ltd
Researcher's name	Victoria Gibson
Title of research project/dissertation	The use of CPTED in professional disciplines
Supervisor's name <i>[Only if researcher is a student]</i>	Derek Johnson

Standard statement of participant consent (please tick as appropriate)*

I confirm that:	
I have been briefed about this research project and its purpose and agree to participate*	<input checked="" type="checkbox"/>
I have discussed any requirement for anonymity or confidentiality with the researcher**	<input checked="" type="checkbox"/>

****Specific requirements for anonymity or confidentiality**

I am completing this questionnaire as a private individual. I am happy for my name to be used, but that of my employer must remain confidential.

Signed -----	Date 7/11/12.....
---------------------	--------------------------

Standard statement by researcher

I have provided information about the research to the research participant and believe that he/she understands what is involved.

Researcher's signature Victoria Gibson.....

Date

.....8/11/12.....

Section A

- 7) What is your field of work?
Security risk consultancy

- 8) What is your current job title?
Senior Security and Risk Advisor

- 9) Please summarise your job description below

I provide security risk advice to clients. In relation to this study, this involves guiding clients in the built environment sector in relation to understanding risks to their projects, both on completion and during construction, and how these might be best mitigated. Mitigations that I advise on include application of CPTED to designs, incorporation of harder physical and electronic security measures and guarding and similar operational responses.

Section B

This section aims to identify what, if any frameworks are in use within your profession. By Framework we mean a general set of concepts to understand and guide an overlapped crime prevention approach.

8. In your field of work, at what stage would you consider crime prevention?

Crime risks would be considered at RIBA stage A.

Crime prevention design strategy and intent would be considered at B and expanded upon at C.

9. What Crime Prevention policy/framework/guideline do you use or refer to, if any?(If non please state in space provided)

None. Secured by Design if required by client and an appropriate standard exists.

10. How do you use this policy/framework/guideline?

A checklist for application of design principles and, if absolutely necessary for the client or for planning approval, for security hardware.

Section C

This Section aims to identify terms used to describe crime prevention matters and evaluate their importance between disciplines

Q1. The table below shows common terms for Crime Prevention concepts found in CPTED. For each term please state:

- g) if you are familiar with the term in the context of crime prevention generally,
- h) if you use the strategy in your practice
- i) If you answer **Yes** in **both** column A and B please state which category you would place the crime prevention term in

Crime Prevention Term	A) Are you familiar with the term in the context of crime prevention? (Please delete as appropriate)	B) Do you use this term in your practice? (Please delete as appropriate)	C) Which category would you place the Crime prevention term in? (Please tick or highlight all categories that apply)
Activity support	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Motivation reinforcement	N	N	Surveillance Positive Reinforcement Access Control None of the above

Territoriality	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Movement control	N	N	Surveillance Positive Reinforcement Access Control None of the above
Natural access control	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Formal organised surveillance	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Target hardening	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Defensible space	Y	Y	Surveillance Positive Reinforcement Access Control None of the above

Activity programme support	Y	N	Surveillance Positive Reinforcement Access Control None of the above
Territorial reinforcement	N	N	Surveillance Positive Reinforcement Access Control None of the above
Natural surveillance	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Maintenance	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Information Provision	N	N	Surveillance Positive Reinforcement Access Control None of the above
Milieu	N	N	Surveillance Positive Reinforcement Access Control None of the above
Territorial behaviour	Y	Y	Surveillance Positive Reinforcement Access Control

			None of the above
Real surveillance	N	N	Surveillance Positive Reinforcement Access Control None of the above
Changes in the physical environment	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Community building	Y	N	Surveillance Positive Reinforcement Access Control None of the above
Surveillance of employees	Y	N	Surveillance Positive Reinforcement Access Control None of the above
Formal surveillance	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Broken windows	Y	N	Surveillance Positive Reinforcement Access Control None of the above

Deflecting offenders	N	N	Surveillance Positive Reinforcement Access Control None of the above
Removing inducements to crime	N	N	Surveillance Positive Reinforcement Access Control None of the above
Signage and bans	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Activity placement	N	N	Surveillance Positive Reinforcement Access Control None of the above
Activity location	N	N	Surveillance Positive Reinforcement Access Control None of the above
Boundary definition	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Target protection	N	N	Surveillance Positive Reinforcement Access Control

			None of the above
Situational crime prevention	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Communitarianism	N	N	Surveillance Positive Reinforcement Access Control None of the above
Image	N	N	Surveillance Positive Reinforcement Access Control None of the above
Space Management	N	N	Surveillance Positive Reinforcement Access Control None of the above
Image Management	N	N	Surveillance Positive Reinforcement Access Control None of the above
Image Milieu	N	N	Surveillance Positive Reinforcement Access Control None of the above

Target Hardening through security measures	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Image management and maintenance	Y	N	Surveillance Positive Reinforcement Access Control None of the above
Quality environments	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Surveillance	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Natural Informal Surveillance	N	N	Surveillance Positive Reinforcement Access Control None of the above
Informal Surveillance	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Activity Generation	N	N	Surveillance Positive Reinforcement Access Control

			None of the above
Place Management	N	N	Surveillance Positive Reinforcement Access Control None of the above
Image Maintenance	N	N	Surveillance Positive Reinforcement Access Control None of the above
Maintenance of Surroundings	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Exterior Maintenance	N	N	Surveillance Positive Reinforcement Access Control None of the above
Available Control	N	N	Surveillance Positive Reinforcement Access Control None of the above
Reinforce Natural Kingdom	N	N	Surveillance Positive Reinforcement Access Control None of the above

Repair and Preservation	N	N	Surveillance Positive Reinforcement Access Control None of the above
Natural Supervision	N	N	Surveillance Positive Reinforcement Access Control None of the above
Social Activity Support	N	N	Surveillance Positive Reinforcement Access Control None of the above
Access management	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Access Control	Y	N	Surveillance Positive Reinforcement Access Control None of the above
Awareness of the Environment	N	N	Surveillance Positive Reinforcement Access Control None of the above
Environment	Y	N	Surveillance Positive Reinforcement Access Control

			None of the above
Environmental Quality and Sense of Ownership	N	N	Surveillance Positive Reinforcement Access Control None of the above
Image/Maintenance	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Image/Management	Y	Y	Surveillance Positive Reinforcement Access Control None of the above
Management and Maintenance	Y	Y	Surveillance Positive Reinforcement Access Control None of the above

Q2. Are there other terms that you use in your work to reflect issues of crime prevention through design of the environment that are not in the above table? (Please delete accordingly)

Yes

Q3.If you have answered Yes to Q2 please provide those terms with a brief explanation of their meaning:

The main culprit here Secured by Design. ACPO has hijacked the concepts of CPTED in the UK, to the benefit of ACPO and some housing developments but to the detriment of other bodies and types of development.

Similarly the concept of CPTED has been expanded by some to include. What would previously have been considered purely counter-terrorist(CT) measures. This raises separate questions of semantics (is terrorism to be considered with more typical crimes?) and methodology (does CPTED have the ability to affect the likelihood of terrorist activity in an area?).

Thank you for completing the questionnaire. If you need any further information about the research or would like to withdraw your contribution to the study please contact:

Victoria.gibson@northumbria.ac.uk

Questionnaire 4



Faculty of Engineering and Environment

RESEARCH PARTICIPANT CONSENT FORM

Name of participant	*****
Organisation	Ravelin Security Consulting Ltd
Researcher's name	Victoria Gibson
Title of research project/dissertation	The use of CPTED in professional disciplines
Supervisor's name <i>[Only if researcher is a student]</i>	Derek Johnson

Standard statement of participant consent (please tick as appropriate)*

I confirm that:

I have been briefed about this research project and its purpose and agree to participate* ☒

I have discussed any requirement for anonymity or confidentiality with the researcher** ☒

****Specific requirements for anonymity or confidentiality**

Signed

ASamuels

Date 16/11/2012....

Standard statement by researcher

I have provided information about the research to the research participant and believe that he/she understands what is involved.

Researcher's signatureVictoria Gibson.....

Date16/11/12.....

Section A

10) What is your field of work?
Security Consulting

11) What is your current job title?
Principal Security Consultant

12) Please summarise your job description below

Sam Samuels is an experienced security engineer who has been working in security consultancy for the past 14 years having previously served 21 years in various police roles including firearms, crime prevention, royalty protection, control rooms and public order duties.

His security consultancy experience encompasses protection of critical infrastructure, aviation and maritime, petro-chemical and industrial, leisure and commercial projects located around the globe.

He has recent experience in Libya having been deployed there three times this year for various clients.

He is self-employed and works mainly as a specialist engaged by larger security companies requiring his extensive skills. In the past 18 months he has been engaged in projects and proposals by Thales, Olive Group, Control Risks, Citadel and Whispering Bell and end clients include Marriott, British American Tobacco, Shell, Lukoil, KOGAS, Conoco Phillips, Hess, Marathon, SNC Lavalin, Raytheon, MER, Etihad Airways and others.

His experience ranges from physical protection measures for super-prime villas to the design of detonation layers and duck & cover shelters for expeditionary camps.

Sam is a talented IT super-user and has developed MS Excel spreadsheets for the design of CCTV footprints foreshortening, Lens Calculation, ISO 12100 Risk Assessments, Operational Requirements and Baseline Measures Assessment. He can use 2D and 3D CAD Software (Autodesk AutoCAD, Revit and 3dsMax Design 2013 / UDK / SketchUp 8 / Poser 2012) Image and Presentational Software (Adobe Design Suite 6) and Lighting Design (ReluxSuite). He provides his own laptop and has fully licensed copies of the above software.

Section B

This section aims to identify what, if any frameworks are in use within your profession. By Framework we mean a general set of concepts to understand and guide an overlapped crime prevention approach.

11. What Crime Prevention policy/framework/guideline do you use or refer to, if any?(If non please state in space provided)
Use Secured by Design / Defensible Space / Routine Activity Theory

12. How do you use this policy/framework/guideline?

For design concept – I begin each concept report with the following:

In order to achieve the above requirements, it is essential that the security measures be integrated with the architectural design and vision.

The most important aspect of the integration is that the opportunity for misuse is minimised.

Dr Paul Ekblom, of the U.K. Home Office Policing and Reducing Crime Unit, expressed this concept as follows “*Crime prevention by design (and indeed by other situational strategies) not only involves the*

designer in a radical shift in perspective (from envisaging use to envisaging misuse) but also in gearing up to keep pace with changing circumstances and adaptive offenders.”

The design of any building must accommodate the principle that certain individuals will seek to misuse facilities. One should note the use of the word ‘will’ instead of ‘may’. Misuse is inevitable unless there is control or supervision.

There is such a thing as a bad area – it is one that facilitates misuse.....

Section C

This Section aims to identify terms used to describe crime prevention matters and evaluate their importance between disciplines

Q1. The table below shows common terms for Crime Prevention concepts found in CPTED. For each term please state:

- j) if you are familiar with the term in the context of crime prevention,
- k) if you use the strategy in your practice
- l) If you answer **Yes** in **both** column A and B please state which category you would place the crime prevention term in

Crime Prevention Term	A) Are you familiar with the term in the context of crime prevention? (Please delete as appropriate)	B) Do you use this term in your practice? (Please delete as appropriate)	C) Which category would you place the Crime prevention term in? (Please tick or highlight all categories that apply)
Activity support	N	N	Positive Reinforcement
Motivation reinforcement	Y	N	Surveillance Positive Reinforcement

			Access Control None of the above
Territoriality	Y	Y	None of the above
Movement control	Y	Y	Access Control
Natural access control	Y	Y	Access Control
Formal organised surveillance	Y	Y	Surveillance
Target hardening	Y	Y	Access Control
Defensible space	Y	Y	Surveillance Positive Reinforcement
Activity programme support	N	N	Surveillance Positive Reinforcement Access Control None of the above
Territorial reinforcement	Y	Y	Positive Reinforcement

Natural surveillance	Y	Y	Surveillance
Maintenance	Y	Y	Positive Reinforcement
Information Provision	Y	Y	Surveillance Positive Reinforcement Access Control
Milieu	Y	Y	Surveillance Positive Reinforcement Access Control
Territorial behaviour	Y	Y	Surveillance Positive Reinforcement Access Control
Real surveillance	Y	Y	Surveillance Positive Reinforcement
Changes in the physical environment	Y	Y	Surveillance Positive Reinforcement Access Control

Community building	Y	Y	Positive Reinforcement
Surveillance of employees	Y	Y	Surveillance Positive Reinforcement Access Control
Formal surveillance	Y	Y	Surveillance
Broken windows	N	N	Surveillance Positive Reinforcement Access Control None of the above
Deflecting offenders	Y	Y	Surveillance Positive Reinforcement Access Control
Removing inducements to crime	Y	Y/	Positive Reinforcement
Signage and bans	Y	Y	Surveillance Positive Reinforcement Access Control

Activity placement	N	N	Surveillance Positive Reinforcement Access Control None of the above
Activity location	N	N	Surveillance Positive Reinforcement Access Control None of the above
Boundary definition	Y	Y	Access Control
Target protection	Y	Y	Access Control
Situational crime prevention	Y	Y	Surveillance Positive Reinforcement Access Control
Communitarianism	Y	Y	Surveillance Positive Reinforcement Access Control
Image	N	N	Positive Reinforcement
Space Management	Y	Y	Surveillance Positive Reinforcement

			Access Control
Image Management	N	N	Positive Reinforcement
Image Milieu	N	N	Surveillance Positive Reinforcement Access Control None of the above
Target Hardening through security measures	Y	Y	Access Control
Image management and maintenance	N	N	Positive Reinforcement
Quality environments	N	N	Surveillance Positive Reinforcement Access Control None of the above
Surveillance	Y	Y	Surveillance
Natural Informal Surveillance	Y	Y	Surveillance
Informal Surveillance	Y	Y	Surveillance Positive Reinforcement

Activity Generation	N	N	Surveillance Positive Reinforcement Access Control None of the above
Place Management	N	N	Surveillance Positive Reinforcement Access Control None of the above
Image Maintenance	N	N	Positive Reinforcement
Maintenance of Surroundings	Y	Y	Positive Reinforcement
Territorial Enforcement	Y	Y	Surveillance Positive Reinforcement Access Control
Exterior Maintenance	Y	Y	Positive Reinforcement Access Control
Available Control	N	N	Surveillance Positive Reinforcement Access Control

			None of the above
Reinforce Natural Kingdom	N	N	Surveillance Positive Reinforcement Access Control None of the above
Repair and Preservation	N	N	Positive Reinforcement Access Control
Natural Supervision	Y	Y	Surveillance Positive Reinforcement Access Control
Social Activity Support	N	N	Surveillance Positive Reinforcement Access Control None of the above
Access management	Y	Y	Surveillance Positive Reinforcement Access Control
Access Control	Y	N	Access Control
Awareness of the Environment	N	N	Surveillance
Environment	Y	N	None of the above

Environmental Quality and Sense of Ownership	N	N	Surveillance
Image/Maintenance	Y	Y	Positive Reinforcement
Image/Management	Y	Y	Positive Reinforcement
Management and Maintenance	Y	Y	Positive Reinforcement

Q2. Are there other terms that you use in your work to reflect issues of crime prevention through design of the environment that are not in the above table? (Please delete accordingly)

No

Q3.If you have answered Yes to Q2 please provide those terms with a brief explanation of their meaning:

Thank you for completing the questionnaire. If you need any further information about the research or would like to withdraw your contribution to the study please contact:
Victoria.gibson@northumbria.ac.uk

Questionnaire 5



Faculty of Engineering and Environment

RESEARCH PARTICIPANT CONSENT FORM

Name of participant	*****
Organisation	
Researcher's name	Victoria Gibson
Title of research project/dissertation	The use of CPTED in professional disciplines
Supervisor's name <i>[Only if researcher is a student]</i>	Derek Johnson

Standard statement of participant consent (please tick as appropriate)*

I confirm that:

I have been briefed about this research project and its purpose and agree to participate*

I have discussed any requirement for anonymity or confidentiality with the researcher**

****Specific requirements for anonymity or confidentiality**

Signed -----

Date Nov 30 2012.....

Standard statement by researcher

I have provided information about the research to the research participant and believe that he/she understands what is involved.

Researcher's signatureVictoria Gibson.....

Date11/12/12.....

Section A

- What is your field of work?

Architecture

- What is your current job title?

Project Manager

- Please summarise your job description below

I take clients from planning to bugeting to schematic design, through design development, through construction documents and into construction on their projects. I manage budgets, questions, comments, CAD drawings and customer service.

Section B

This section aims to identify what, if any frameworks are in use within your profession. By Framework we mean a general set of concepts to understand and guide an overlapped crime prevention approach.

- In your field of work, at what stage would you consider crime prevention?

Crime prevention begins at the very beginning. Starting with locating the site and if it already has crime rates to consider. Then the type of architecture. What kind of crime will the building be subject to? Then as the layout of the building is considered, what kind of crimes could take place in or near the building?

- What Crime Prevention policy/framework/guideline do you use or refer to, if any?(If non please state in space provided)

Our office does not have a crime prevention policy/framework/guideline, although this questionnaire causes me to consider drafting one.

- How do you use this policy/framework/guideline?

n/a

Section C

This Section aims to identify terms used to describe crime prevention matters and evaluate their importance between disciplines

Q1. The table below shows common terms for Crime Prevention concepts found in CPTED. For each term please state:

- if you are familiar with the term in the context of crime prevention generally,
- if you use the strategy in your practice
- If you answer **Yes** in **both** column A and B please state which category you would place the crime prevention term in

Crime Prevention Term	A) Are you familiar with the term in the context of crime prevention? (Please delete as appropriate)	B) Do you use this term in your practice? (Please delete as appropriate)	C) Which category would you place the Crime prevention term in? (Please tick or highlight all categories that apply)
Activity support	Y	Y	Positive Reinforcement

Motivation reinforcement	N	N	None of the above
Territoriality	Y	Y	Access Control
Movement control	N	Y	Surveillance
Natural access control	Y	Y	Surveillance
Formal organised surveillance	N	N	Surveillance
Target hardening	N	N	None of the above
Defensible space	Y	Y	Access Control

Activity programme support	N	N	None of the above
Territorial reinforcement	N	N	Access Control
Natural surveillance	Y	Y	Surveillance
Maintenance	Y	Y	Positive Reinforcement
Information Provision	Y	Y	Positive Reinforcement
Milieu	Y	Y	Positive Reinforcement
Territorial behaviour	Y	Y	Positive Reinforcement
Real surveillance	N	N	Surveillance

Changes in the physical environment	Y	Y	Surveillance
Community building	Y	Y	Positive Reinforcement
Surveillance of employees	Y	Y	Surveillance
Formal surveillance	Y	Y	Surveillance
Broken windows	Y	Y	None of the above
Deflecting offenders	Y	Y	Positive Reinforcement
Removing inducements to crime	Y	Y	Positive Reinforcement

Signage and bans	Y	Y	Access Control
Activity placement	N	N	None of the above
Activity location	Y	Y	Surveillance
Boundary definition	Y	Y	Access Control
Target protection	N	N	None of the above
Situational crime prevention	Y	Y	Positive Reinforcement
Communitarianism	N	N	None of the above
Image	Y	Y	Positive Reinforcement

Space Management	Y	Y	Positive Reinforcement
Image Management	Y	Y	Positive Reinforcement
Image Milieu	N	N	None of the above
Target Hardening through security measures	Y	Y	Access Control
Image management and maintenance	Y	Y	Positive Reinforcement
Quality environments	Y	Y	Positive Reinforcement
Surveillance	Y	Y	Surveillance
Natural Informal Surveillance	Y	Y	Positive Reinforcement

Informal Surveillance	Y	Y	Positive Reinforcement
Activity Generation	Y	Y	Surveillance
Place Management	Y	Y	Positive Reinforcement
Image Maintenance	Y	Y	Positive Reinforcement
Maintenance of Surroundings	Y	Y	Positive Reinforcement
Exterior Maintenance	Y	Y	Positive Reinforcement
Available Control	Y	Y	Surveillance

Reinforce Natural Kingdom	N	N	Access Control
Repair and Preservation	Y	Y	Positive Reinforcement
Natural Supervision	Y	Y	Positive Reinforcement
Social Activity Support	Y	Y	Surveillance
Access management	Y	Y	Access Control
Access Control	Y	N	Access Control
Awareness of the Environment	N	N	None of the above
Environment	Y	N	None of the above

Environmental Quality and Sense of Ownership	N	N	None of the above
Image/Maintenance	Y	Y	Positive Reinforcement
Image/Management	Y	Y	Positive Reinforcement
Management and Maintenance	Y	Y	Positive Reinforcement

Q2. Are there other terms that you use in your work to reflect issues of crime prevention through design of the environment that are not in the above table? (Please delete accordingly)

No

Q3.If you have answered Yes to Q2 please provide those terms with a brief explanation of their meaning:

Thank you for completing the questionnaire. If you need any further information about the research or would like to withdraw your contribution to the study please contact:
Victoria.gibson@northumbria.ac.uk

Appendix D

Discussion Guide for Built Environment Professionals

Guidelines

- Things to cover before focus groups start:
- There are no right or wrong answers to the questions, just ideas experiences and opinions which are all extremely valuable even if you consider it not to be
- We're tape recording, one person speaking at a time
- You don't need to agree with others, but you must listen respectfully as others share their views
- It is important to hear both positive and negative sides of an issue
- It is important for both women's and men's ideas to be equally represented and respected.
- Rules for phones and pagers if applicable: We ask that your turn off your phones or pagers. If you cannot and if you must respond to a call, please do so as quietly as possible and re-join us as quickly as you can.

My role as a facilitator

My role is as a researcher to facilitate a healthy discussion between the group. This will just make sure that all aspects of the framework have been considered and discussed and the research questions have been covered. Other than that I will just sit back and observe your interpretation of the framework and how you apply it to the planning process and if you come across any contextual barriers which may obstruct your decision making.

Because the aim of this session is to identify barriers to both the understanding of the framework and how it can be applied, I am not able to advise on how the framework can be applied or what it means. But I can assure you, you will receive much more information at the end of the project.

If there are any things discussed which I am unfamiliar with, I may jump in and ask for clarifications on these points. I am not a planner and I have no planning background so you will have to excuse that, and therefore may be unaware of certain terms or concepts discussed.

Your role as professionals

Your role as professionals will be to spend some time with your colleagues working through each concept and principle. I would like you to begin by discussing what you think each section means, providing examples where possible. Then I would like you to consider how you could apply this framework to the design of the St Augustine Education City making reference to any planning regulations, time frames, policies, standards, plans etc. which may restrict application in any way.

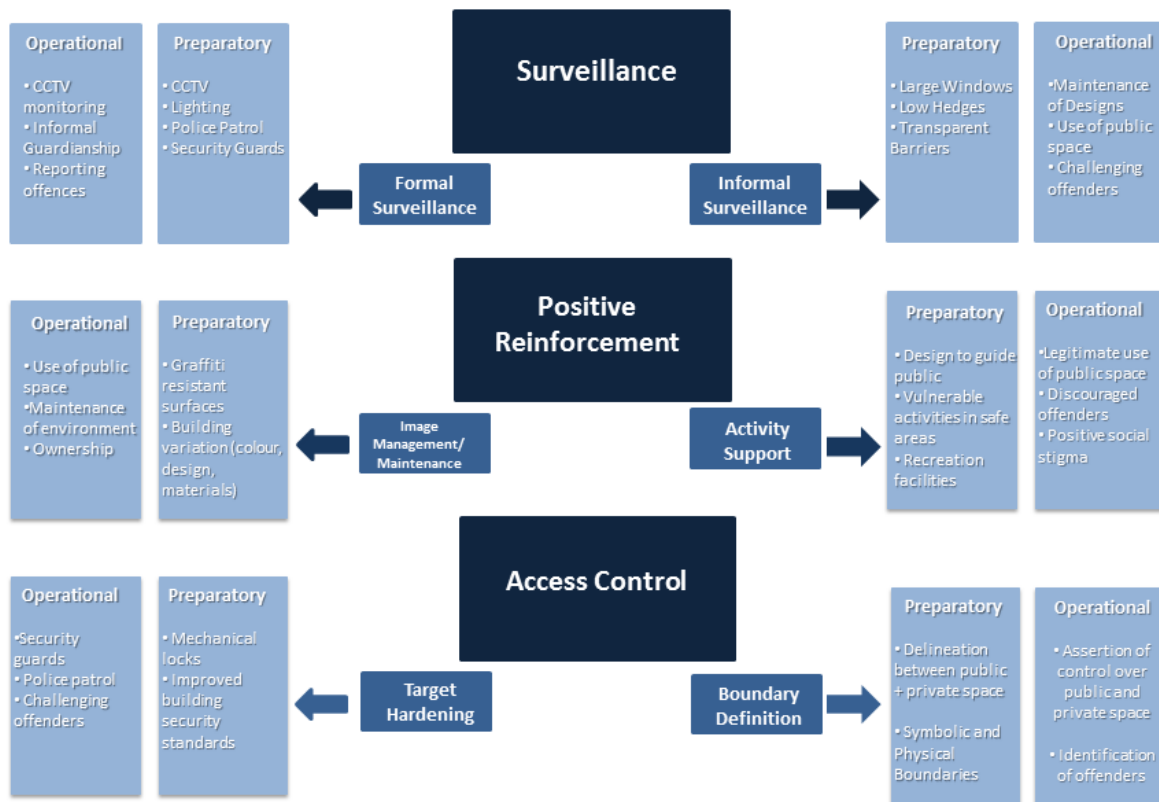
I would also like you to consider the social context of St Augustine and if you think there are any issues which would prevent you from applying these principles to your design, please make these well known.

Opening prompt

Before we start, I'd like us all to go round and introduce ourselves for the purpose of the video, and finish the sentence "CPTED is...."

.....

I will now give you all a copy of the framework and I would just like you to take a minute to look at it and then briefly try to explain what you think it means. I will be providing you with more information in a few minutes which will enable us to discuss it further.



Now im going to talk you give you a document which discusses the theory of each concept to help you understand crime and criminal motivation. It will not make reference to any CPTED principles but I would like you to consider how these theories can be applied to design.

Routine activities of people

Opportunity is at the centre of crime theories which focus on the situation of the offence. The premise is often that crime is not only affected by social causes such as poverty, inequality and unemployment but also by opportunities within the physical environment. Opportunity theories of crime suggest that contemporary society offers more opportunity for crime to occur; there are much more targets.

Motivated offenders are individuals who are not only capable, but are also willing to commit a crime.

Suitable targets can be considered as a person or an object that is seen by offenders as vulnerable or attractive. The analytic focus takes a micro level view and emphasises shifts in patterns of offender and victim movement. It centres on crime events and the behaviour and decisions made by the offender. In this instance, it is assumed that crime can be committed by anyone who has the opportunity.

During the routine activities of victims and offenders, movement patterns often converge in time and space therefore their paths will intersect. It is therefore the requirement of CPTED to ensure that such spaces are always overlooked so that during these routine activities, natural guardianship takes place.

Signals of urban disorder

When assessing the attraction of a place to offenders, norm setting and the signalling effects of urban disorder on additional crime and anti-social behaviour have been considered. It is believed that the maintenance and monitoring of urban environments in a well-ordered condition might stop further crime and escalation into more serious crime. Maintenance and monitoring of public space has been identified as an informal social control mechanism. An area which is well maintained and preserved will signal control and ownership over public space.

Fear is also considered a crucial element of community decline. Fear increases as perception of disorder rises, creating a social pattern that breaks down the fabric of a community leaving residents feeling disconnected. Lack of maintenance in an area perceives low social control and in turn increases fear through the perception that crime is present in the area.

The activities present in the environment can be a significant influencing feature for both crime and fear. The activities of people using public space must be carefully considered to ensure vulnerable activities are placed in safe locations which can positively influence behaviour in these spaces. Vulnerable activities juxtaposed with unsafe locations can cause illegitimate behaviour to extend

beyond boundaries into wider public spaces. Population heterogeneity may be considered here and consideration of social norms and how these may influence the wider community.

Offender motivation

When considering the motivations of offenders, it is believed that man is a reasoning actor who will consider the costs and benefits of committing a crime. There are several assumptions made here:

- People choose their behaviour, both conforming and deviant, based on their rational calculations
- The calculation is based on a cost benefit analysis; pleasure vs. pain.
Pleasure (successful crime) / Pain (being caught) = Choice
- Choice will be controlled by the perception and understanding of the potential consequences that will follow a criminal act.

These assumptions are based on empirical findings into the investigation of human nature. It is therefore assumed that crime is purposive behaviour designed to meet the needs of the offender, such as money, status, sex etc. and that meeting these needs involves some form of decision making, which are inevitably constrained by limits, ability and availability of relevant information. CPTED can therefore be used to limit access to the target therefore increasing the effort required, and increasing the risk of being caught.

Crime Patterns

The movement of victims and offenders create patterns in the environment based on the nature of daily routines. Regular points of interest (work, school, and home) are considered nodes of which offenders move between; creating paths. It is therefore important when considering typical paths of

movement that these are always observable and sightlines and visibility are increased.

Typical nodes may also include points of interest (shopping malls, parks etc.), where large amounts of people without any premeditated intention to commit a crime may come together, but the opportunities present and the targets available increase the motivation to offend. These are known as crime generators.

Crime Attractors on the other hand are locations which attract offenders because of its known opportunity for crime. Design in these areas can therefore encourage surveillability and reduce target accessibility so that no place is left vulnerable.

Identifications of these spaces can also help analyse crime risk in an area.

Consideration of the framework

Now we have all had time to consider the theories of crime and criminal motivation in which CPTED has derived from, I would like you to work through each of the sections.

You will see the framework is structured into three components, Surveillance, Positive Reinforcement and Access control.

Within each of these components there are two principles. These principles individually have different outcomes, but collectively they facilitate the main concept. For example, formal surveillance will be different to informal surveillance, but collectively they facilitate surveillance.

TERRITORIALITY

Before we start, I would like to make you aware that this framework recognises an overarching goal of territoriality which is to be used as a mechanism for crime prevention. It is considered that in an environment which has adequate collective territorial control, crime and fear should be reduced. This does not mean territorial control by one or two members of the community, but all in an equal

partnership. So I would like you to consider how these principles could be applied to achieve this collective goal.

Goal – Territoriality – Natural behaviour by which organisms characteristically lay claim to an area and defend it against members of their own species.

SURVEILLANCE

1) can you explain to me what you understand by surveillance

2) Can you tell me the difference between formal and informal surveillance

Concept 1 – Surveillance – A strategy used to observe all users of the environment with the goal of identifying unauthorised persons and deterring unauthorised entry or illegitimate behaviour.

Concept 1: Principle 1 – Formal Surveillance – Mechanical forms of surveillance, or physical security/patrol guards.

Concept 1: Principle 2 – Informal Surveillance – The design of the physical and natural environment to create clear site lines and open spaces which provide opportunities for capable guardianship through observation of public spaces.

3) Can you tell me how both informal and formal surveillance would be applied to the St Augustine Education City project

4) What effects do you think this would have?

5) Do you think this would work?--- why?

6) Can you identify any context specific issues with the St Augustine Education City project which may inhibit the success of surveillance

7) What would you use Surveillance for in this area?

8) Do you think there are any requirements from the local communities in order to make surveillance a successful crime prevention measure?

- If so, why??

POSITIVE REINFORCEMENT

1) Can you explain what you understand by Positive Reinforcement?

2) Can you tell me what you understand by activity support?

3) Can you tell me what you understand by Image Management and Maintenance?

Concept 2 – Positive Reinforcement is of Legitimate Behaviour – Encouraging positive routine behaviour in public, semi-public and private space with the goal of enhancing community cohesion, making illegitimate behaviour more noticeable and therefore unacceptable.

Concept 2: Principle 1 – Activity Support – Placing non-threatening activities in public and semi-public and private spaces to encourage respectful legitimate users during their routine activities.

Concept 2: Principle 2 – Image Management / Maintenance – Encouraging the public to use attractive, clean open spaces and develop an attachment to the environment, maintenance of these tasks are vital for the sustainability of Activity Support.

- 4) Can you tell me how activity support would be applied to the St Augustine Education City project
- 5) What effects do you think this would have?
- 6) Do you think this would work?--- why?
- 7) Can you identify any context specific issues with the St Augustine Education City project which may inhibit the success of activity support?
- 8) What would you use activity support for in this area?
- 9) Do you think there are any requirements from the local communities in order to make activity support a successful crime prevention measure?
- If so, why??
- 10) Can you tell me how Image Management/Maintenance would be applied to the St Augustine Education City project?
- 11) What effects do you think this would have?
- 12) Do you think this would work?.... why?
- 13) Can you identify any context specific issues in this area which may inhibit the success if image management/maintenance?
- 14) What would you use image/management for in this area?
- 15) Do you think there are any requirements from the local community in order to make image/management a successful crime prevention Measure?

ACCESS CONTROL

- 1) Can you tell me what you understand by access control?
- 2) Can you tell me what you understand by target hardening?
- 3) Can you tell me what you understand by boundary definition?

Concept 3 – Access Control – Strengthening the security of buildings and reinforcing spheres of private space with the goal of restricting access to crime targets or unauthorised areas and increasing the risk for offenders.

Concept 3: Principle 1 – Target Hardening- Physical and Mechanical Locks and Alarm systems to restrict access and make buildings more resistant to attack.

Concept 3: Principle 2 – Boundary Definition – Defining between private, semi-private and public space through physical and psychological barriers with the aim of making boundaries known to potential invaders and restricting their access through the apprehension of being noticed

- 4) Can you tell me how target hardening would be applied to the St Augustine Education City project
- 5) What effects do you think this would have?
- 6) Do you think this would work?--- why?
- 7) Can you identify any context specific issues with the St Augustine Education City which may inhibit the success of target hardening?

8) What would you use target hardening for in this area?

9) Do you think there are any requirements from the local communities in order to make target hardening a successful crime prevention measure?

- If so, why??

10) Can you tell me how boundary definition would be applied to the St Augustine Education City project?

11) What effects do you think this would have?

12) Do you think this would work.... why?

13) Can you identify any context specific issues in this area which may inhibit the success if boundary definition?

14) What would you use boundary definition for in this area?

15) Do you think there are any requirements from the local community in order to make boundary definition a successful crime prevention Measure?

Appendix E

Pilot study Part D: Section 1- Professional Focus groups

Initial plans for this section of the study were to analyse professionals' use of CPTED during a live planning process by observing stakeholder meetings and identifying barriers to their understanding and use of the CPTED framework. Unfortunately, due to delays in pre planning approval by the Trinidad Government, the project which the study was planned to observe was abandoned and an alternative project was adopted which focused on improving pedestrianisation in the St Augustine Education City. Whilst this was still a live planning process, due to time constraints of the PhD and the anticipated timescale of the St Augustine Education City Project in terms of actual planning, stakeholder meetings were not the focus of the analysis but rather focus groups with built environment professionals. However, prior to the change in case study projects, a pilot study was conducted with South Wales Police Force to observe meetings between CPDA's and professionals in the planning process. The aim here was to assess if the content of communication and proposed analytical method was effective in identifying barriers to communication and application of the CPTED concept.

Recording the meetings was considered a productive task in that it identified technical aspects worthy of consideration. The focus groups were recorded due to large participant numbers and the need for identification of individuals during the discussion. Overall, video recording the discussions was considered a useful tool for analysing the content of communication. The image and the audio were both clear although the pilot study did highlight the risk of background noise which can affect the quality of the audio. Accents of participants were also sometimes difficult to distinguish but video recording made this easier to interpret due to play back options. Battery life and memory of the video recorder also needed considered to ensure that there was sufficient storage to hold the content of the focus group.

In terms of the analysis of content, the coding of communication into categories and sub categories proved a useful task. Although there were not many barriers identified in the content of the pilot

study, the categorisation of communication was successful which proved that the analytical method was sound. The pilot study did however highlight a need to code each category instead of just the quote, this would allow for a more detailed analysis. Also that quotes should be separated by rows so not to get confused between them. Example analysis sheets from the pilot study are listed below.

Example Analysis Sheet 1

Participant Name Profession and Role in meeting	Project Architect- Design for Porth Tigre
Participant Name Profession and Role in meeting	Discuss latest SBD developments for Porth Tigre
Date	07/01/14
Location	Loin and Co Architects
Meeting context	Not much prior contact with CPDA, early design stages and currently on hold due to confidential client feasibility.
Duration of meeting	16 minutes

Conflict Code	Main Category	Generic Category	Sub Category	Context Category
C001	Application Barrier	Conflict in multi-disciplinary working specific to CPTED	Conflicting priorities	Aesthetics vs. security
C002	Application Barrier	Conflict in multi-disciplinary working specific to CPTED	Policy conflict	Conflict with footprint policy

Conflict code	Anecdotal evidence
C001	Participant 2 "Why didn't they put railings on this side?" Participant 1 "I think it was just waiting to be developed as part of the scheme, and the landscape architects wanted to move away from the railings as they saw it as a generic thing and thought that the design could respond better to the environment for aesthetic purposes".
C002	Participant 2: "So can you not have this all as one block, to reduce the alley ways in between buildings?" Participant 1: "One of the things that the client uses for design is this footprint policy, and one of the key things in the footprint is that you can't have a block more than 100 linear metres without a break in it".

Example Analysis Sheet 2

Participant Name Profession and Role in meeting	CPDA (South Wales Police). SBD advice
Participant Name Profession and Role in meeting	Development Manager (Cardiff Community Housing Association). Overseeing design
Date	06/01/14
Location	Cardiff community housing association
Meeting context	Discussion of two sites regarding final planning approval and confirming SBD requirements

Duration of meeting	23 minutes

Conflict Code	Main Category	Generic Category	Sub Category	Context Category
A001	Interpretation Barrier	Conflicts specific to CPTED	Legislation conflict	New requirement for windows and doors to be marked "Pass 24"
A002	Application Barrier	Conflicts in multi disciplinary collaboration specific to CPTED	Conflict of priorities	Security vs. aesthetics
A003	Application Barrier	Conflicts in multi disciplinary collaboration specific to CPTED	Conflict of priorities	Security vs. costs

Conflict code	Anecdotal evidence
A001	Participant 1 "One of the things that we are saying to all developers now is not just meet Pass 24 standards but SBD and the New Homes Guide requires that as and from 01/01/14, all main entrance and ground floor windows and doors need to be marked with pass 24 compliance.
	Participant 2 "Hmm I remember this being mentioned at Lowdon's".
	Participant 1: "The Lowdon issue is that what you need to be doing is saying to your suppliers upon procurement that you require the windows and doors to be marked as pass 24 compliant. So if there is any hiccups and they send you the wrong windows, it is very clear as to who responsibility it is".
A002	Participant 2: "Ok I'll do that, the tender documents are going out today so ill make sure it is in the contract".
	P1: "Because its rear garden which is more vulnerable than the front of properties, so what I'd say is to have a 2.1 metre fence that runs along that boundary and treat it as a public open space"
A003	p2: "The problem with doing that is you're going to end up with a fence that is over 5 metres because it is on a bank and it is going to look really imposing"
	Participant 2: (In reference to the previous discussion of public open space at the back of properties). Ideally I'd like to turf it but there's a big maintenance cost there so I just want to put low cost shrubbing that will deter people from walking through it.
	Participant 1: "The only other problem I have here is that this parking area has no windows overlooking it"
	Participant 2: "The thing with that though is this person's window will be looking directly into this person's garden and we might have a bit of a privacy issue here".

Key terms used	Context
Surveillance Defined Boundaries Territoriality	High levels of surveillance in initial plans. Creates a sense of community Boundaries create a sense of ownership

The following analysis sheets document the coding of real focus groups conducted with built environment professionals for this PhD.

TCPD Professional Focus Group Analysis Sheets

Participant Name Profession and Job title and definition	P1M- Land use planner- Strategies and ways of incorporating guidance and design of your urban environment with the specific means of preventing crime
Participant Name Profession and Job title and definition	P2F: Senior Land Use Planner- Promoting an environment that is safe for all
Participant Name Profession and Job title and definition	P3M: Town Planner- Planning techniques, standards and policies to create a safe environment
Participant Name Profession and Job title and definition	P4F: Graduate Intern- Strategies that can be implemented to ensure safety of an area
Participant Name Profession and Job title and definition	P5F: Town Planner- Reducing the opportunity for crime through urban design
Participant Name Profession and Job title and definition	P6F: Town Planner- Using urban design and by extension urban planning as a tool to promote safety and security within neighbourhoods or regions
Participant Name Profession and Job title and definition	P7M: Land use planner- Provides an opportunity to address crime from a different perspective whereby you use environmental design to develop communities which are safer to all
Participant Name Profession and Job title and definition	P8F: Town planner- Social strategies and design strategies used at different scales to incorporate crime and safety in developments at the neighbourhood and building scale
Participant Name Profession and Job title and definition	P9M: Town Planner- The use of urban design strategies as well as community development strategies to make safer communities
Participant Name Profession and Job title and definition	P10F: Planning intern- Urban design along-side social planning to prevent crime or criminal activity in an area specific to the social issues that result in the crime itself.
Participant Name Profession and Job title and definition	P11M: Town Planner- A design orientation used to discourage criminal activity. Part of it is common sense on the part of the developer but this research is formative to bringing the concept into legislation in formalising it further in how we actually execute it and approve development plans
Participant Name Profession and Job title and definition	P12F: Town Planner- CPTED is not currently supported in our existing practice of Town and Country Planning in Trinidad and Tobago and I don't know if a real appreciation of it will ever really filter in, even with the new legislation
Participant Name Profession and Job title and definition	P13M: Town Planner- Looks at impacting the social sphere of a geographic area or community by land use planning and urban design techniques by looking at applying planning principles to get to the root of a lot of the criminal activities and symptoms by tackling the social issues.
Date	03/07/14
Meeting context	To identify barriers to interpreting and applying CPTED in the St Augustine Context
Duration of meeting	3 hours

No	Conflict Code	Main Category	Generic Category	Sub Category	Context Category
1	0B6a	0/Communication Barrier	B/Conflicts in MD working specific to CPTED	6/Knowledge gaps	a/ Developers do not know about CPTED
2	00B4a	00/Application Barrier	B/Conflicts in MD working specific to CPTED	4/Institutional restrictions	a/ Social programming not the role of a planner
3	00A4a	00/Application Barrier	A/Conflicts in MD working	4/Conflicts of power	a/ Developer has final say
4	0/00B6b	00/Application Barrier	B/Conflicts in MD working specific to CPTED	6/Knowledge gaps	b/ Not enough knowledge to advise CPTED design
5	00B4b	00/Application Barrier	B/Conflicts in MD working specific to CPTED	4/Institutional restrictions	b/ No power to regulate building design specifications
6	00B3a	00/Application Barrier	B/Conflicts in MD working specific to CPTED	3/Bureaucratic restrictions	a/ Clients response devalue CPTED advice
7	00A4b	00/Application Barrier	A/Conflicts in MD working	4/Conflicts of power	b/ Design advice overruled by ATPP
8	00B2a	00/Application Barrier	B/Conflicts in MD working specific to CPTED	2/Conflict of priorities	a/ Crime safety vs cost
9	0/00B6c	0/00 Both barriers	B/Conflicts in MD working specific to CPTED	6/Knowledge gaps	c/ Not enough knowledge to implement AND advise
10	0/00B6d	0/00 Both barriers	B/Conflicts in MD working specific to CPTED	6/Knowledge gaps	d /No understanding of social context to apply and transfer
11	0B6e	0/Communication Barrier	B/Conflicts in MD working specific to CPTED	6/Knowledge gaps	e/ Miss understood / poorly translated social issues by panel
12	0E4a	0/Communication Barrier	E/Conflicts specific to development/team context	4/Poor info sharing/partnership working	a/ Lack of effective partnerships for information sharing
13	00E4b	00/Application Barrier	E/Conflicts specific to development/team context	4/Poor info sharing/partnership working	b/ Lack of effective partnerships for implementation support
14	00B6d	00/Application Barrier	B/Conflicts in MD working specific to CPTED	6/Knowledge gaps	d/ No understanding of social context to apply and transfer
15	00B6d	00/Application Barrier	B/Conflicts in MD working specific to CPTED	6/Knowledge gaps	d/ No understanding of social context to apply and transfer
16	0B1a	0/Communication Barrier	B/Conflicts in MD working specific to CPTED	1/ Conflicting disciplinary interpretation of CPTED language	a/ Surveillance has no relevance to design

17	00D2a	00/Application Barrier	D/Conflicts specific to T+T Context	2/ Culture	a/ Individual lots restricts informal surveillance
18	00D2b	00/Application Barrier	D/Conflicts specific to T+T Context	2/ Culture	b/ Old villages will not allow for controlled development
19	00D5a	00/Application Barrier	D/Conflicts specific to T+T Context	5/ Crime Type/Offender MO	a/ Natural surveillance counterproductive for Burglary MO
20	00A3c	00/Application Barrier	A/Conflicts in MD working	3/ Poor info sharing/partnership working	c/ Inadequate policing to sustain operational effects
21	00D7a	00/Application Barrier	D/Conflicts specific to T+T Context	7/ Lifestyle	a/ Affluent rely on private security for surveillance
22	00A3c	00/Application Barrier	A/Conflicts in MD working	3/ Poor info sharing/ partnership working	c/ Inadequate policing to sustain operational effects
23	00C8a	00/Application Barrier	C/Conflicts specific to CPTED	8/ Reliant on other principles	a/ Surveillance requires sidewalks for public use
24	00D5b	00/Application Barrier	D/Conflicts specific to T+T Context	5/ Crime Type/Offender MO	b/ CPTED concepts not suitable for crime in Trinidad
25	00D8a	00/Application Barrier	D/Conflicts specific to T+T Context	8/ Economy	a/ Gas industry restricts effective use of public space
26	00C1a	00/Application Barrier	C/Conflicts specific to CPTED	1/ Conflicting principles	a/ Activity support conflicts with BD + TH
27	00C2a	00/Application Barrier	C/Conflicts specific to CPTED	2/ Negative effects	a/ Access control causes displacement
28	00A3d	00/Application Barrier	A/Conflicts in MD working	3/ Poor info sharing/partnership working	d/ Inadequate partnerships for public maintenance
29	00B2b	00/Application Barrier	B/Conflicts in MD working specific to CPTED	2/ Conflict of priorities	b/ Aesthetics vs profit
30	00B2b	00/Application Barrier	B/Conflicts in MD working specific to CPTED	2/ Conflict of priorities	b/ Aesthetics vs profit
31	00B4c	00/Application Barrier	B/Conflicts in MD working specific to CPTED	4/ Institutional restrictions	c/ No institution for maintenance of public and private space
32	00D2c	00/Application Barrier	D/ Conflicts specific to T+T Context	2/Culture	c/ Image management portrays affluence
33	00D2d	00/Application Barrier	D/ Conflicts specific to T+T Context	2/Culture	d/ Physical barriers portray something to hide

34	00A3b	00/Application Barrier	A/Conflict in MD working	3/ Poor info sharing/partnership working	b/ Lack of partnerships for implementation support
35	00B4d	00/Application Barrier	B/Conflicts in MD working specific to CPTED	4/ Institutional restrictions	d/ Design is not in a planners job role
36	00A3e	00/Application Barrier	A/Conflict in MD working	3/ Poor info sharing/partnership working	e/ Lack of knowledge sharing for standard enforcement
37	00B2c	00/Application Barrier	B/Conflict in MD working specific to CPTED	2/Conflict of priorities	c/ Crime and safety vs developer priorities
38	00B2a	00/Application Barrier	B/Conflict in MD working specific to CPTED	2/Conflict of priorities	a/ Crime safety vs cost
39	00A3b	00/Application Barrier	A/Conflict in MD working	3/ Poor info sharing/partnership working	b/ Lack of partnerships for implementation support
40	0B6f	0/Communication Barrier	B/Conflicts in MD working specific to CPTED	6/ Knowledge gaps	f/ Draftsmen do not know about CPTED
41	00A3b	00/Application Barrier	A/ Conflict in MD working	3/ Poor info sharing/partnership working	b/ Lack of partnerships for implementation support
42	00B5a	00/Application Barrier	B/ Conflicts in MD working specific to CPTED	5/ Policy conflicts	a/ Planning standards restrict consideration of wider context
43	00A5a	00/Application Barrier	A/ Conflicts in MD working	5/ Time	a/ Understaffing restricts effective planning time
44	0/00B6b	00/Application Barrier	B/ Conflicts in MD working specific to CPTED	6/ Knowledge gaps	b/ Not enough knowledge to advise CPTED design
45	00B5a	00/Application Barrier	B/Conflicts in MD working specific to CPTED	5/Policy conflicts	a/ Planning standards restrict consideration of wider context
46	0A3f	0/ Communication Barrier	A/ Conflict in MD working	3/ Poor info sharing/partnership working	f/ Lack of partnerships to promote CPTED benefits
47	0C3a	0/ Communication Barrier	C/ Conflicts specific to CPTED	3/ Not practical	a/ CPTED requires more practical education for transferability
48	0/00B2a	0/Communication Barrier	B/ Conflicts in MD working specific to CPTED	2/Conflict of priorities	a/ Crime safety vs cost
		00/Application Barrier	C/ Conflicts specific to CPTED	1/ Conflicting principles	a/ Activity support conflicts with BD + TH

49	00C1a				
50	00B4e	00/Application Barrier	B/ Conflicts in MD working specific to CPTED	4/ Institutional restrictions	e/ TCPD do not ask for target hardening specifications
51	00C2b	00/Application Barrier	C/Conflicts specific to CPTED	2/ Negative effects	b/ Target hardening creates negative image
52	00C2c	00/Application Barrier	C/Conflicts specific to CPTED	2/ Negative effects	c/ Target hardening causes social exclusion
53	00D2e	00/Application Barrier	D/ Conflicts specific to T+T Context	2/ Culture	e/ Crime in Trinidad too extreme to sustain CPTED

No	Conflict code	Evidence
1	0B6a	P11: The concepts I have experienced, when we would think of it as common sense, a lot of people don't go through that when putting forward their proposals.
2	00B4a	P11: In terms of social programming, in conjunction with the concept, I wouldn't have much of a role with this; effectively, I am just assessing a proposal for a development
3	00A4a	P12: "Even though we might say; 'an appropriate location for open spaces', the developer comes with the final application and just sticks it anywhere" P3: "Yeah they don't stick to it"
4	00B6b	P12: "We still have this issue of cul-de-sacs. In our outlines we say you must have a cul-de-sac of such and such length, But we haven't really revolutionised to really say ok, 'probably wouldn't necessarily facilitate too much of a cul-de-sac design when we're doing a sub division, we could probably look at some other areas. But in terms of these two areas here and how to design a space to deal with criminal activity, it isn't really there; it's not really something that we can do".
5	00B4b	P2: "We don't use it to the best of its advantage... We only advise that developers should discuss their plans with planners prior to final submission and I think there is where we need to use it to its advantage... We could try to filter what CPTED is trying to promote... but we don't use it to its fullest advantage... We do have templates and outlines so probably we need to beef up on that" P12: "Here's the thing, our current act gives us the right to refuse things based on design.... When a developer comes before us and they have a discussion with us about what they can and cannot afford... even some of these suggestions that we make, that we know it's going to nip some of those issues in the bud...they can put up an argument and say, 'well that's something that's not in your purview or something that y'all can regulate against' so even though this is something that is in our act, this is something that we haven't practiced since 1969, right"
6	00B3a	P12:: "There's a bit of a timidity, at least on my part, to actually bring those kinds of considerations to the fore, when you know that nobody else is actually going to take the time to really support that approach and use that as a reason for giving your proposal the green light or not."
7	00A4b	P12: "And sometimes we may refuse things based on design elements, but then the Advisory Town Planning Panel, they can overturn on behalf of the minister, the decisions that we make regardless of the planning or social considerations we gave as reasons for the refusal in the first place". P2: "So it's the architects that have to push this, they have to want to" P11: "The onus really falls on the professionals who do the design"
8	00B2a	P1M:: "The costs associated with different designs or techniques, at the end of the day it all comes down to financial regulation. The only way you could convince people [to implement] is if you can assure them that it would be more cost effective".
9	0/00B6c	P12:: "To get a full appreciation of what we are designing to prevent against or what approaches we can take to manage these particular issues and how we can bring people into the fold and help them understand, I think we ourselves need to have a proper and full understanding of ok these are the impacts of these forms of development, so on our part it is the education and the training"
10	0/00B6d	P11: "Plenty of this [implementing CPTED] relies on first-hand knowledge of the area too. You need to know your area." P6: "You need to know the social issues in the area too, you need to know the areas that have the potential to combat that [crime]"
11	0/00B6e	P11: "The record helps quite a bit too, because we make the most to regularise informal settlements. The panel does its own report which is another layer of detail on the reporting that we do. I wouldn't say that they ignore [social] issues 100% of the time"

		<p>P12: “Whhhhaaaaaaat??”</p> <p>P11: “They don’t, they don’t, they don’t, they <i>usually</i> add another layer of detail onto the analysis that we do”</p> <p>P12: “Yes to <i>refute</i> everything that we say”</p>
12	0A3a	<p>P9: “I think that also, it would be a good idea as planners, for us to foster closer relationships with local organisations and community groups like churches, village councils, the police service etc, because they know what’s happening in the area, people make reports to them, they have the inside information you know. So because of the fact that people don’t have a full appreciation of what planning is and how instrumental it is in the role of community development. I don’t think that those relationships exist in the way that we may want them to at this time but I think they would benefit the appreciation and planning of CPTED”</p> <p>P8: “If we go out and we talk to anyone, that is the extent of the interaction we currently have”.</p> <p>P7: “I think we also need these relationships with outside agencies too, like the HDC’s [Housing Development Corporation], they also have a resource of data which they consider to be key hotspots which could benefit from something like this.</p>
13	00B6f	<p>P11: “So outside the design principles, I really see the concept working in conjunction with other programmes. We could start from the point of CPTED but in the existing areas where crime is actually a problem it may not go down well without being conducted in conjunction with another social programme. So it may be a matter of just establishing the concept in the agency responsible for planning and then moving forward to the community development areas so they are aware of what it is and so they can start retrofitting the communities”</p>
14	00B6d	<p>P6: “You also need to be aware of who is vulnerable, so like the elderly and children, to see where they are located then look at what techniques can be used for each of those groups”</p>
15	00B6d	<p>P13: “I feel that we pay a lot of focus to what crimes are being caused but we never try to answer why it’s happening and we should be looking at taking the design and trying to target the why.</p>
16	0B1a	<p style="text-align: center;"><u>Surveillance</u></p> <p>P12: “I can’t see us effecting formal surveillance from our profession unless we go to the actual meeting. I can’t even say that surveillance would be part of design in a building”</p>
17	00D2a	<p>P3: “Surveillance wise, the onus is on the developer or the owner. Informal surveillance is about how we orient a building; the layout. Each lot and each building needs to interlock so they can see each other.”</p> <p>P12: “So this would be to do with the subdivision and the building itself, so the biggest influence we could have on this is like the HDC’s or whatever”</p> <p>P3: “Yeah yeah the HDC’s”</p> <p>P13: “But when it comes to individual [buildings], we would have the subdivision approved but then the individuals come and it’s up to the individuals what they want their house to be like”.</p> <p>P6: Yeah, and if somebody wants their house a certain way, you can’t tell them they can’t have it”.</p>
18	00D2b	<p>P12: “Yeah but try this [implementing CPTED into controlled development] in an old village (further research) or an organic settlement”</p>

19	00D5a	<p>P12: "To bring CPTED to the table, in the first place we have to realise that culture plays a large part in how people choose to design their homes and spaces. Because large windows, doesn't really a deal in Trinidad. Low hedges; not really a deal in Trinidad; people don't do that."</p> <p>P3: "Putting some of those things in place would be counterproductive. The larger settlements, people will have smaller windows and higher hedges so that people cannot see inside so the bandit can't guess. So what happens is in some areas, people drive in the evening and scout de scene. So people put up high hedges and small windows so the scouts don't know what they have inside."</p> <p>P2: "But it works in two ways because if you have high hedges and high walls it gives the perception that you have something to hide"</p>
20	00A4c	<p>P3: "If you call the police from St Claire or St Anne and say a man is burgling your house, that man is already dead by the police. But if you call the police from the East side, they waiting for you to die... then they'll come"</p> <p>P12: "Yeah yeah they respond faster"</p>
21	00D7a	<p>P10: "They [affluent] can afford to have private surveillance. If you and your neighbours could afford to have private surveillance, you know like securico or whatever, you think you would have as much crime?"</p>
22	00A3c	<p>P2: "Pricing has a huge impact on the use of surveillance. The government recently reduced taxes on CCTV. A lot of shops have CCTV now. But bandits are clever, they know how they can escape; it doesn't matter how much surveillance you have. A bandit know they can escape.... They [the police] can't use it as evidence, but they can monitor it. If I'm a bandit and you see my face on camera, that don't bother me, you have to physically catch me and attack me. And bandits know that, so the surveillance would meet a brick wall in that aspect."</p>
23	00C8a	<p>P9: "St Claire might be a minority community in Trinidad which actually has sidewalks. I think the lack of sidewalks in a lot of communities means people use the street less, and they do use the street less. If there were properly laid out sidewalks you would get more residents. So I think those things there work against informal surveillance. Even where sidewalks are present though, some people will be scared to use them"</p>
24	00D5b	<p>P1: "Try convincing people though, I mean I'm no CPTED expert, but I've been in St Augustine talking to residents and I try and bring these concepts across and they like, that can't work, Trinidad is a different breed. You can't be doing them things, you can't be opening it up to the public; you mad. It really have a resistance out here"</p>
25	00D8a	<p>P10: "But in Trinidad cars cheap so everybody is going to have a car"</p> <p>P2: "Exactly, that's now part of our society, part of our culture. When I was a child everybody used to walk; recently I walked by my father; I was the only person on the road"</p> <p>P10: "In other countries it is expensive to own a car, it is expensive to pay for insurance. In Trinidad we don't even realise how cheap it actually is therefore nobody need to walk"</p> <p>P13: "We have created a society which don't have the supporting services to make you want to get up and walk"</p> <p>P10: "Exactly and because you don't know your neighbour, you don't know if the bandit is from your area or not"</p>
26	00C1a	<p style="text-align: center;"><u>Positive Reinforcement</u></p> <p>P12: "With regards to the operational tasks of positive reinforcement and use of public space; sometimes when you get the corporation managing an open space they fence around it and they put locks on it a'ight. So you getting rid of the vagrants, you getting rid of the potential environment for truants to come and just vibez and deal drugs or whatever but then at the same point in time you preventing people in the community from using it. So you want to make people use the space but at the same time there's certain things needed to regulate it"</p>
27	00C2a	<p>P6: "You know some parks they close at 6"</p> <p>P10: "Yeah and when the youths can't get in and they have nothing else to do, they go and find another place to go and rob"</p>

28	00A3d	P12: "This positive reinforcement the whole preparatory thing, that is actually one of the more effective things in high income communities because they keep their environment legit. They put out the money to maintain their environment. So that could be a barrier because if you don't have the finances, the environment will not be maintained in these areas"
29	00B2b	P10: "Image Management and Maintenance costs money, developers don't want to pay for that kinda stuff. There's no other organisation that would do it".
30	00B2b	P12: "See developers want to maximise on profitable gain, so they take the most undesirable parcels of land and use that as open space and people don't want to use that". P6: "Another thing with open space is the maintenance of the open space. We get given development with open space, they give us nice place, everything. Three years down the line, its over grown, but the developer, he got his money and he gone".
31	00B4c	P13: "Wasn't there something recently, a management meeting or something where they were talking about changing the outline for community recreational space or community multifunctional space or something" P6: "But then who takes over? <i>WHO</i> takes over the space?"
32	00D2c	P10: "When it comes to variations in building surface and texture, I think this is up to the culture. In the UK you have these areas where everywhere is the same, all the buildings are the same, they function the same, everything which is good because you won't know what that person got in their house. But in Trinidad everybody want their own thing. If you want to have your house this colour and whatever, then the bandit say 'ok this person fix up this place, they have that in there' and because it is different, they will be able to target it easier than if everything is the same..."
33	00D2d	P10: "When you put up a door, it means your hiding something"
34	00A3b	P1: "I think that our biggest barrier as an organisation is that we operate 'up here' so there always has a gap which hasn't closed yet and I think all these things [CPTED principles] will be effected by that" P8: "Especially planning which is separate from building control"
35	00B4d	P10: "And I don't think the planning process even use design to guide the public. Beside the guide to planners we don't even use design so this is non-existent in the planning process"
36	00A3d	P8: "I mean we have standards, but how is anybody outside this process supposed to know about the standards"
37	00B2c	P12: "The developer himself has to have the desire to do these things himself... It is actually difficult to get him to buy into it himself."
38	00B2a	P8: "I think the way that we think about spaces, people don't generally think like that" P3: "We are still ruled by how much per square footage to gain the maximum amount of dollars" P1: "So we don't have the opportunity to think about the whole site itself or within the wider context" P3: "Yeah the developer don't want to see that, he want to see how much he can maximise on <i>his</i> site, they don't want to think about the wider area at all".
39	00A3b	P12: "I think we need to tap into the architect because the architects have a very full understanding of a lot of things. These people are trained to look at different design. We need to start making the connection. P8: "Are you telling me that if I want to build a house I have to go to an architect?!" P12: "No, No. No that is not what I am saying, I am saying if we are to bring these things to the fore, we need to talk to the architects; these are the ones that know"
40	00B6f	P1: "I think we should talk to the draftsmen; the persons that don't know. The architects know, they just choose not to implement".

41	00A3b	P9: "I think going back to what P1 said, there is still a big gap and as an organisation we need to close that gap by pulling in these people like architects and draftsmen and bring them early into the planning process".
42	00B5a	P9: "The thing is in Trinidad, people don't think of areas they think of sites. They don't think of the cultural legacy of an area, you know this is my area, this is my neighbourhood, this is my city or whatever. We might talk about it sometimes in major planning initiatives but when it translates it never really translates down to the ground. P6: "But do you not think that our standards are the cause of that. Because we implement one set of technical standards for every single part of Trinidad. The basic thing is; 3.5, 2.5 , 4.5. We don't say let's look at this area and see what it's doing, no; we just look at one set of standards and that is it. Its more management we should be doing, not controlling".
43	00A5a	P8: "I know people who have to deal with 500 applications a day. Do you think they would have time to consider the wider context? We only have time to control, we don't have time to manage"
44	0/00B6b	P9: "But if people understood <i>before-hand</i> , nobody wants to tell the person you need to do x,y and z, but if they understand <i>why</i> they should probably use a certain material then I think that they would do it. And that is where the crime prevention will communicate.
45	00B5b	P1: A1:30:00: "One thing we never ask in relation to streetscape is, show me your building in the context of the other buildings; we never ask that. So when a person put a glass thing we don't care when the next person put a wood thing and we need to do that so we are designing and putting things in context, I think it is something we could easily implement".
46	0A3d	P3: "The next person we need to include in this is real estate market, they determine design. Think about it, the real estate market determine, hey you have this amount square footage for office, this is the price you'll get for rental. So everybody strictly will design a box because they only deal with square footage. If we can move away from that and tell real estate forget about square footage and advertise the design instead of basing rental on square footage you will be getting better designs. When people come to view properties, they ask how much square footage there is, they don't ask about design, how much parking there is, where the parking is etc the focus is on square footage to fit a certain rental bracket.
47	0C3a	P9: "That's what I was saying before, we need to bring all these people to the table; real estate agents, architects, community organisations everything" P10: Yeah but I don't think we can just rely on meetings for education, you need to go further and look at web pages etc because a meeting just won't work.
48	0/00B2a	P10: "That's the thing with CPTED, once you tell people how it will benefit them on a whole they will implement it. You know, with finances, because that's what it boils down to at the end of the day. P9: "But how can we make people think beyond finances. I think it is our job to make people think like that [beyond finances] "
49	00C1	<u>Access Control</u> P12: "I think in Trinidad everybody have Boundary definition through hedges and trees and walls. It is only in the HDC you find that the yard and the road; same thing" P1: "Some commercial property don't know where their property end, it goes the pavement, the streets, the road" P12: "But I think that boundary definition in commercial properties is counterproductive. It presents a barrier to people traversing which is in an environment which is dominated by retail and commerce and that kind of thing, you want to invite people in. With regards to the materials, if there is a definitive line between what is used here that can indicate that that's a different type of space without it actually being a barrier"
50		P12: "With target hardening, we will not tell you what to do, or you must construct your walls and your barriers in a particular way for the purpose of target hardening. It would be along the lines of to not inhibit visibility, for instance when we govern the height of a wall on a bend, on a curve, it's strictly on the basis

	00B4e	of you don't want to cause a blind corner" P8: "And we don't ask them to provide this information anyway
51	00C2b	P1: "I think burglar proofing has a negative effect on aesthetics. People should really use those pull down shutters for the store fronts instead of bars and razor wire but you know people would protest"
52	00C2c	P12 "The negative impact of target hardening would be alienation. There's a very fine line between keeping out the rabble and keeping out everybody. P1: "That is a problem because a lot of places feel exclusionary... and you see rows of barbed wire everywhere" P12: "A high wall, yeah that's a prison in the back there"
53	00D2e	P1: "And trying to tell people to think of different ways, they tell you you mad, they say that can't work in Trinidad"

Open Plan Planning Professional Focus Group

Participant 1	P1M: Town Planner_ Open plan consulting
Participant 2	P2F: Business development/community engagement officer_ Open plan consulting
Participant 3	P3M: Architect_ Lincoln Council
Participant 4	P4M: Urban Designer_ Lincoln Council
Participant 5	P5M: Planner_ Lincoln Council
Date	13/04/15
Location	Sparkhouse Studios, Ropewalk, Lincoln.
Meeting context	To identify barriers to interpreting and applying CPTED
Duration of meeting	1 hour 8 minutes

No	Conflict Code	Main Category	Generic Category	Sub Category	Context Category
1	00B2d	00/Application Barrier	B/Conflicts in MD working specific to CPTED	2/Conflict of priorities	d/ Crime and Safety vs Aesthetics
2	00C6a	00/Application Barrier	C/Conflicts specific to CPTED	6/Not adaptive	a/ Not adaptive to streetscape
3	00C5a	00/Application Barrier	C/Conflicts specific to CPTED	5/Not flexible	a/ CPTED/SBD standards are too specific
4	00B3b	00/Application Barrier	B/Conflicts in MD working specific to CPTED	3/Bureaucratic conflicts	b/ No incentive to engage
5	0B6g	0/Communication Barrier	B/Conflicts in MD working specific to CPTED	6/Knowledge gaps	g/ Consider CPTED to excessively focus on target hardening
6	00C2d	00/Application Barrier	C/Conflicts specific to CPTED	2/Negative effects	d/ Surveillance breaches privacy
7	00D2f	00/Application Barrier	D/Conflicts specific to T&T	2/Culture	f/ Planning process hinders surveillance
8	00C2e	00/Application Barrier	C/Conflicts specific to CPTED	2/Negative effects	e/ Target hardening restricts surveillance and increases fear

9	00C8a	00/Application Barrier	C/Conflicts specific to CPTED	8/Reliant on other principles	a/ Natural surveillance is not always carried out
10	0A3d	0/ Communication Barrier	A/Generic conflicts with MD working	3/Poor information sharing/partnership working	d/ Inadequate partnerships for public maintenance
11	00B2e	00/Application Barrier	B/Conflicts in MD working specific to CPTED	2/Conflict of priorities	e/ Crime and Safety vs Streetscape
12	00A3b	00/Application Barrier	A/Generic conflicts with MD working	3/Poor information sharing/partnership working	b/ Lack of effective partnerships for implementation support
13	00D2f	00/Application Barrier	D/Conflicts specific to country context	2/Culture	f/ Planning process hinders surveillance
14	00D8b	00/Application Barrier	D/Conflicts specific to country context	8/Economy	b/ Transiency of population impacts guardianship
15	00B2f	00/Application Barrier	B/Conflicts in MD working specific to CPTED	2/Conflict of priorities	f/ Crime and Safety vs Permeability
16	00B4f	00/Application Barrier	B/Conflicts in MD working specific to CPTED	4/ Institutional restrictions	f/ Image management is not part of planning legislation
17	00B2a	00/Application Barrier	B/Conflicts in MD working specific to CPTED	2/Conflict of priorities	a/ Crime and Safety vs Cost
18	00B4g	00/Application Barrier	B/Conflicts in MD working specific to CPTED	4/Institutional restrictions	g/ Image management not considered at pre planning stage
19	00B2g	00/Application Barrier	B/Conflicts in MD working specific to CPTED	2/Conflict of priorities	g/ Quantity vs quality of land
20	00A3b	00/Application Barrier	A/ Generic conflicts with MD working	3/Poor information sharing/partnership working	b/ Lack of effective partnerships for implementation support
21	0A3g	0/ Communication Barrier	A/ Generic conflicts with MD working	3/Poor information sharing/partnership working	g/ Lack of communication re crime impact
22	0/00B5b	0/00/ Both	B/ Conflicts in MD working specific to CPTED	5/Policy conflict	b/ Disconnect between central govt and local govt

23	0A1a	0/Communication	B/Conflicts in MD working specific to CPTED	1/Conflicting disciplinary interpretation of CPTED language	b/ Lack of detail to support principles and application
24	00C8a	00/Application Barrier	C/Conflicts specific to CPTED	8/ Reliant on other principles	a/ Natural surveillance is not always carried out
25	00B6h	00/Application Barrier	B/ Conflicts in MD working specific to CPTED	6/ Knowledge gaps	h/ Lack of knowledge on target hardening variation
26	00C2b	00/Application Barrier	C/ Conflicts specific to CPTED	2/ Negative effects	b/Target hardening creates a negative image
27	00C2b	00/Application Barrier	C/ Conflicts specific to CPTED	2/ Negative effects	b/ Target hardening creates a negative image

No	Conflict code	Evidence
1	00B2d	P2“They didn’t want to go too far into the SBD route though because it starts to effect the way that the houses are laid out and you start losing the aesthetic of the village”
2	00C6a	P1“They wanted to the old village character with all the little nooks and cranny’s where everyone has their own private spaces, but that goes against SBD”
3	00C5a	P4: “We didn’t go for accreditation, because after the initial discussions it becomes very prescriptive. To get past that high level advice it’s looking at manufacturer specifications in terms of doors and windows and things like that. I think because it’s an accreditation it focuses on detailed design and specification when a developer hasn’t even got planning permission there is a lot of work to go through that you don’t really understand”
4	00B3a	P3:“Although the overriding principles are commendable, there is no award to say that you have looked at the fundamental principles early on and therefore people don’t have time for the paper work and effort required”
5	0B6g	P4: “I think 80% of CPTED focuses on target hardening”
6	00C2d	P2: “I think CCTV can make people feel unwelcome and that they should be allowed to use spaces without being watched”
7	00D2f	P5““The area around St Augustine there are a lot of alley ways between the houses, I think that process of planning naturally restricts surveillance”
8	00C2e	P4““I think bars on windows can restrict surveillance and it can also make people more fearful because they think that they are at risk”
9	00C8a	P2: “I think some people see things and they turn a blind eye because it’s a big hassle for them, there is nothing set in stone to say that these people will actually do anything”
10	0A3d	P2 “I think landscaping has a big impact on surveillance and we often don’t know who’s responsibility maintenance is. The feedback we’ve had is that the local authority won’t pay for it. They don’t like it when it gets overgrown but then at the same time they don’t want to pay to maintain it”
11	00B2e	P2 “In terms of landscaping, you would think that everything has to be bright and open. But when you’re taking the place making approach you want to create places that feel like they’ve got character and often that character comes from unexpected little quirky spaces. You could feel too exposed”
12	00A3b	P3 “I think that knowing your neighbours has a big impact on people’s ability to carry out surveillance. You need a good sense of community. In terms of the governing bodies in supporting communities, we don’t have that really. I think the variation in community groups so students, eastern Europeans, people who have lived there for ages, there’s nothing bringing people together. They are old Victorian terraced streets which have gone from knowing everybody to knowing nobody. There is no sense of community anymore. We need more investment and partnerships with governing bodies who can bring those communities together”.
13	00D2d	P1 “I think permeability is an issue and one which we don’t tend to get right. A lot of footpaths don’t have windows looking out and a lot of streets are curved which means that people can get away quickly without being seen”

14	00D8b	P2: "I think we live in a world with a very transient population now. People are moving to different parts of the country for work and for education. When you have a very transient population you don't make any effort to get to know your neighbours and that impacts community cohesion. There has been a spike in crime rates in places like this around Lincoln, and that spreads a wider negative perception about the place and the people that live in it".
15	00B2f	P4 "Cul-de-sacs are really favoured upon in much of the crime prevention and SBD guidance in that it helps bring people together etc, but in planning principles we tend to move away from that. And there is a danger there because if you are trying to increase permeability and it is done half -heartedly then you may create alley ways which are vulnerable. It's a poorly thought out link through which people don't really use and it's a quick getaway for criminals"
16	00B4f	P1 "Image management is an area that planning legislation tends to steer away from. I'd say it is considered more at the end of the process and most developers try and get away with not taking responsibility for it. You can see in a lot of developments that landscaping and maintenance is just seen as a bolt on"
17	00B2a	P5 "The developer just goes for the lowest possible budget. There is no regulation for the responsibility. There is also no money allocated to things like image management in terms of public housing projects"
18	00B4g	P5 "The maintainability of landscaping isn't really given much consideration at the outset and it should be quite a high priority"
19	00B2g	P1M "There is an issue with quality and quantity also, there is a drive for quantity of public space when really it should be more about the quality of the spaces that are provided"
20	00A3b	P2 "There is an issue with responsibility and who should be responsible for maintenance. When people work in silos as they do, they tend to concentrate on their bit and when you're working as part of a team and dealing with really complex issues such as crime; there are so many factors that go into causing crime and causing people to behave in a criminal way that actually to look at it from one perspective and that narrow area should be responsible for that particular issue when in fact the impact of that behaviour occurring impacts on so many agencies, organisations, service providers and communities."
21	0A3a	P1 "It seems to me that when you're dealing with situations that are meant to tackle social issues then really there needs to be a very integrated approach to the way in which they are dealt with and budgeted for and it shouldn't just be a case of that developer has some pros and cons to weigh up and he's got his budget and he's got his aims and that's where it starts and stops because actually because getting it wrong or getting it right impacts a much wider economic and social level. In the Caribbean the different government agencies just don't speak to each other there is no communication"
22	0/00B5b	P1M "There is definitely a disconnect between central government and local government particularly in planning because central government's actions are pulling against what local governments are asked to do by the previous central government, there is a constant change".
23	0A1a	P4M: "In the NPPF reference to crime is very vague and woolly and you can kind of interpret it in many ways. It doesn't provide the level of detail that it should"
24	00C8a	P3 "The response to surveillance is really important, they must have trust in something happening after to encourage people to take an active approach"
25	00B6h	P3 "I think target hardening can be really intimidating and we don't really know how to do it without it looking that way"
26	00C2b	P1: "I think shop front shutters are really unattractive, when places are closed and they have steel shutters it creates such a negative image and the place looks derelict"
27	00C2b	P5: "Some target hardening measures cause fear and cause people to walk down different roads"

DOCG Professional Focus Group

Participant 1	P1M CPDA
Participant 2	P2M CPDA
Participant 3	P3M CPDA
Participant 4	P4F CPDA
Participant 5	P5M CPDA
Participant 6	P6M Housing Officer (county council)
Participant 7	P7M CPDA
Participant 8	P8M CPDA
Participant 9	P9F CPDA
Participant 10	P10 Architect
Participant 11	P11M CPDA
Participant 12	P12M CPDA
Date	25.06.2015
Meeting context	CPTED framework
Duration of meeting	1h:03m

No	Conflict Code	Main Category	Generic Category	Sub Category	Context Category
1	00B6d	00/Application	B/ Conflicts in MD working specific to CPTED	6/Knowledge gaps	d/ No understanding of social context to apply
2	00B2a	00/Application	B/ Conflicts in MD working specific to CPTED	2/Conflict of priorities	a/ Crime and Safety vs Cost
3	00B5b	00/Application	B/ Conflicts in MD working specific to CPTED	5/ Policy conflicts	b/ Legislation restricts effective use of CCTV
4	00B5b	00/Application	B/ Conflicts in MD working specific to CPTED	5/ Policy conflicts	b/ Legislation restricts effective use of CCTV
5	00C2d	00/Application	C/ Conflicts specific to CPTED	2/ Negative effects	d/ Surveillance breaches privacy
6	00B6h	00/Application	B/ Conflicts in MD working specific to CPTED	6/ Knowledge gaps	h/ Poor quality cctv systems due to lack of knowledge
7	00B6i	00/Application	B/ Conflicts in MD working specific to CPTED	6/ Knowledge gaps	i/ Staff do not know how to operate CCTV systems
8	00B5c	00/Application	B/ Conflicts in MD working specific to CPTED	5/ Policy conflicts	c/ No standards to enforce CCTV or regulate quality
9	0C7a	0/ Communication	C/ Conflicts specific to CPTED	7/ Not clear	a/ Positive reinforcement principle is unclear

10	00C4a	00/Application	C/ Conflicts specific to CPTED	4/ Not sustainable	a/ Image management and maintenance not sustainable
11	00C4b	00/Application	C/ Conflicts specific to CPTED	4/ Not sustainable	b/ Sustainability is compromised by funding resources
12	00C4c	00/ Application	C/ Conflicts specific to CPTED	4/ Not sustainable	c/ Sustainability is compromised by poor management of public engagement
13	00C4d	00/ Application	C/ Conflicts specific to CPTED	4/ Not sustainable	d/ Sustainability is compromised by poor resilience within organisation
14	00B6j	00/ Application	B/ Conflicts in MD working specific to CPTED	6/ Knowledge gaps	j/ Knowledge retention is poor due to lack of standardised training
15	00A3h	00/ Application	A/ Generic conflicts in MD working	3/ Poor information sharing/partnerships	h/Poor training relies on effective communication and information sharing
16	00B6k	00/ Application	B/ Conflicts in MD working specific to CPTED	6/ Knowledge gaps	k/Lack of knowledge of social factors for evaluation
17	00B4h	00/ Application	B/ Conflicts in MD working specific to CPTED	4/ Institutional restrictions	h/Lack of funding for evaluation of best practice
18	0B1b	0/Communication	B/ Conflicts in MD working specific to CPTED	1/ Conflicting interpretation of language	b/ Would not use/understand terms like activity support
19	00D2g	00/Application	D/Conflicts Specific to Area Context	2/ Culture	g/ Media fuels negativity towards crime prevention efforts
20	00B2a	00/Application	B/ Conflicts in MD working specific to CPTED	2/ Conflict of priorities	a/ Crime and Safety vs Cost
21	00B2h	00/Application	B/ Conflicts in MD working specific to CPTED	2/ Conflict of priorities	h/ Economics vs sustainability
22	00B2i	00/Application	B/ Conflicts in MD working specific to CPTED	2/ Conflict of priorities	i/ Developers under pressure due to requirements for funding

23	00B3b	00/Application	B/ Conflicts in MD working specific to CPTED	3/ Bureaucratic restrictions	b/ Lack of engagement by planner
24	0B5d	0/Communication	B/ Conflicts in MD work specific to CPTED	5/ Policy conflict	d/ Guidance is so diverse that people only implement minimum standards
25	00B2j	00/Application	B/Conflicts in MD working Specific to CPTED	2/ Conflict of priorities	j/ Private vs social housing standards
26	00B5e	00/ Application	B/Conflicts in MD working specific to CPTED	5/ Policy conflicts	e/ Building regulations do not incorporate crime prevention
27	00B6k	00/ Application	B/Conflicts in MD working specific to CPTED	6/ Knowledge gap	k/ No knowledge of social factors for evaluation or measurement
28	00B6k	00/ Application	B/ Conflicts in MD working specific to CPTED	6/ Knowledge gap	k/ No knowledge of social factors for evaluation or measurement
29	00B5f	00/Application	B/ Conflicts in MD working specific to CPTED	5/ Policy conflicts	f/ No policy integration due to lack of social responsibility
30	0A3i	0/ Communication	A/ Generic conflicts in MD working	3/ Poor information sharing/partnership working	i/ Lack of training and regulation limits knowledge transfer

No	Conflict code	Evidence
1	00B6d	P1 I think surveillance depends entirely on the degree of capable guardianship. Surveillance is only effective if there is a capable guardian to act on it. Quite often we don't consider these things, we just put the mechanisms in place to encourage surveillance but the context isn't considered.
2	00B2a	P3 Resources are a huge issue, our boss has just stopped all surveillance in our force area because he thinks that it is a poor use of resources and no evidence of effectiveness
3	00B5b	P2 There are also often legal issues when it comes to surveillance because it is governed by certain legislation which impacts how effective it is, where it can take place, how it is used, what happens with the imagery and this limits the way in which we would like to use surveillance which obviously then impacts on crime prevention efforts.
4	00B5b	P11 The police are limited at the moment with what they can and cannot do with surveillance and councils have other issues with regards to constraints in the way in which surveillance is used.
5	00C2d	P1: There is a huge issue about saturation of cctv and the impact that this has on privacy. We get lots of complaints from residents saying that cameras are looking into people's houses
6	00B6h	P12 There are often quality issues with what's been installed to start with. There are also people who think that because they've written a cheque the cctv is going to do what they want it to do.
7	00B6i	P8 Then you've got management issues in that actually the staff don't know how to work the CCTV
8	00B5c	P7 There is nothing in place to say that people must put surveillance measures in. We need much more enforcement from my point of view and also quality standards. Currently we only have guidance such as the code of practice but people don't take it on board, whether people meet these standards is not policed.
9	0C7a	P3M: I don't know what positive reinforcement is
10	00C4a	P7 The thing with image management and maintenance is that it doesn't last. It works great at the beginning but then things happen and it doesn't last
11	00C4b	P1: It always comes down to money, money runs out or money gets cuts then there are no resources to enforce and maintain it.
12	00C4c	P2: Management as well, we need to make sure that the community carry it on because we can't rely on agencies to drive it forever, but we need the communities to engage in the initial drive otherwise it won't last. We need the community to engage and take ownership over the changes.
13	00C4d	P9: Most initiatives are personality led, and once that person has left then the scheme goes too. The public have to buy into it and sustain it but we also need the initiatives coming from the agencies to be continuous. The police service is not very good at continuity.
14	00B6j	P9 Knowledge retention is a huge issue. Because schemes are initiative led we can't rely on younger generations to continue the work we do. How do organisations retain that? I think there is more awareness about good practice needed to be embedded in training and education of organisations whose responsibility it is to enforce these things. Nothing has been formalised. Having a formalised training system would ensure that when individuals leave the impact is minimal.
15	00A3h	P7: Our force has never had a formalised training system for crime prevention which means that certain work is dependent on one or two individuals, its generally a case of 'oh I don't know about that, give it to him'. We are lucky in Wales because we have a well communicated group here and we pick up the phone and share knowledge. I do know that a lot of forces do not do that
16	00B6k	P4 The problem is that because we are preventing issues from happening it is difficult to actually measure its effects
17	00B4h	P12: There is a lot of good practice out there in terms of measurement and evaluation but there isn't any funding
18	0B1b	P1: I think the problem we have is that the terms that criminologists often use like activity support, this isn't terminology that we would recognise, and it's not something we would use. But if you actually start talking through what we do and what we think about in developments then you will find examples of what you would consider as activity support. I guess it just comes down to the way in which particular principles are defined which perhaps isn't done in a lot of the guidance out there.
19	00D2g	P9: The media has a huge impact on perception of crime, we just need one negative story in the paper and that changes everything
20	00B2a	P6 Planners are extremely obstructive, particularly when it comes to recreational facilities; basically on their plans it always ends up in a corner in between two gable ends of houses and often it's really difficult to get them to change their minds. It all comes down to economics because they want to maximise the value of the land.
21	00B2h	P4 Between sustainability and economics of profit the economics always wins and sustainability takes a knock.
22	00B2i	P10: There are also pressures on developers when they put in applications for new schemes to include certain things like play areas, there are community benefits which funding bodies like the welsh government are looking for. In other words to get more benefit out of the money they put in they are asking for more and more things all the time so there are conflicting agendas.
23	00B3b	P12: Another issue is a lack of engagement, often planning applications go in then we don't get brought in until the last hurdle and we have no way of changing it.
24	0B5d	P7M: There is so much different guidance out there, some more in depth than others, this makes people just do what is absolutely necessary in order to get through, there is no real passion to engage with the evaluation and monitoring of any CPTED design
	* understanding	P4 I can see here that boundary definition is actually controlling access to targets because people might think twice about exceeding boundaries which they know are restricted. And the same with

		target hardening, if there is something physically there stopping you getting in then you might reconsider your actions. I can see how both of these components fit within the broader concept of access control whereas previously these would be considered as two separate entities.
25	00B2j	P1 The welsh government have social policy intervention which actually targets the most vulnerable communities in our population by addressing many of the social issues and by targeting social housing. We've been hitting it right on the nail for over 16 years but unfortunately the private sector continues to build houses with substandard security.
26	00B5e	P5 Building regulations MUST enforce this in any development; they MUST enforce crime prevention into the design and standards of new developments.
27	00B6k	P3 All of our assessments are site specific, we obviously look at the SBD standards but we also look at crime and crime reports using beat maps.
28	00B6k	P2 I think something which is really important which we don't consider is social perception and how this has changed over time. Especially older professionals who maybe grew up in the early 50s who perhaps have a false perception of the way in which communities are tied in modern days.
29	00B5f	P 11CPTED could easily be integrated into sustainable development policy, but is it likely to? NO. Everything is measured against cost and private house builders have no social responsibility their responsibility is to pay a dividend in shares that is the capitalist system we live in and is unlikely to change.
30	0A3i	P8: Integration of CPTED principles into sustainable development policies would massively improve engagement and transfer of knowledge. We are currently in a massive education thing in England with building control officers because of new building regulations so there are new areas that they have to learn so everything is getting regulated. Once something goes into a regulated system people have to pick it up

Appendix F

St James Police Department Interview

1) Can you tell me about the current crime issues in St Augustine?

Police Officer 1: Lots of robberies, house breaking and theft of motor vehicles

Police Officer 2: Robberies, home invasions mainly. We are doing a hotspot initiative at the moment which involves identifying hotspots for these types of crimes and increasing police patrol in these areas. I am finding that this causes displacement though and criminals migrate to non-hotspot areas due to the increase in police presence.

2) Why do you think these crime problems have come to exist?

Police Officer 1: Lots of businesses which cause crowding of both people and the built environment. There are lots more clubs and casinos dotting about around here now also which create vulnerable spaces for people with lots of cash coming into the area for these amenities. This area is very densely populated too.

There are also a lot of students in the area and they are unaware of this place so a bit naive to the risks that are posed to them.

Police Officer 2: Economics of this area have a big impact on crime here. CARICOM agreements, CARICOM single market -CSME impacts on crime because people from different islands come to Trinidad, commit crimes and leave. We can't keep it under the radar and we have terrible partnerships with other islands when it comes to policing. Globalisation has caused the CSME to come into existence, we couldn't afford to remain isolated as an independent island.

3) What is currently practiced in terms of crime prevention?

Police Officer 1: We just patrol the streets really and arrest people. We don't have any partnerships

Police Officer 2: We try to increase police visibility as much as possible. We also use the hotspot policing model adopted from the UK.

4) Can you identify any aspects of the local physical environment which impact on crime?

Police Officer 1: Density of business premises. Also there are lots of government buildings which are high rise and therefore there are a huge number of people confined in a small geographic space

Police Officer 2: The Ghetto vs built up affluent areas cause problems because the economy and the wealth of the land is not evenly distributed, some of the poverty here is below the line and when people aren't satisfied they have no hope and nothing to hold onto. It is very hard for these people to be satisfied when they have affluent communities right on the other side of the main road.

We are also a transatlantic shipping point for narcotics to the western world and this area in particular holds a lot of rivers and swamps which are not policed. We don't even have a police marine branch; this was disbanded in the 1980s*. The coast guard knows things are happening, the little streams are 'expected' to be policed by us, but we don't have the resources for that.

5) Can you identify any aspects of the local social environment which impact on crime?

Police Officer 1: Most people come into St Augustine from deprived areas and people don't want to work. They are lazy!

Police Officer 2: The gap between the rich and poor here is widening fast and government resources seem to be dwindling. It seems that some areas because of the 'political' loyalties are being improved depending on *who* is in government. I find myself out on patrol giving money to people on the street out of my own pocket. I think the feeling of greed has over-

eaten the majority of us now. There was a time when we would have looked after each other and that doesn't happen now. Everybody is out for what they can get and this applies to both locals and foreigners.

With the resources dwindling, it is our mind set that the administration in power should take care of those locally before expanding charity to those abroad. This doesn't happen and you wonder what their agenda really is.

We have a bit of a North-South divide in St Augustine, the North side is affluent and the South side is in poverty. This makes policing very difficult as it is not necessarily a crime problem but a social problem and there is a huge imbalance in the population here.

I think the drugs issue we have in this country is heavily fuelled by the government, I think the present administration is heavily funding the drugs trade. The security of borders is much more porous. They also proposed a new law to equip members of the offence forces to arrest people. This was strongly opposed by the general public.

6) Can you identify any features of the local physical infrastructure in St Augustine which impact on crime, safety, fear of crime and the quality of life?

If so, what is it about those features that cause these impacts?

Police Officer 1: St Augustine/Curepe is a centralised area it has very easy access and egress which makes it easy for criminals to pass through anonymously.

Police Officer 2: I think globalisation has had a big effect on the physical infrastructure of this city. We have a huge car industry here, the public transport is extremely unreliable and a large percentage of the population from these towns work in POS. A lot of people around here can't afford vehicles though so the used market has flourished, so has theft of motor vehicles. We also have a high traffic congestion problem. This is fuelled by one of the lowest gas prices in the world which makes car ownership very appealing to many of our citizens. This congestion is worsened massively by the size of our roadways, it does not allow for easy traffic flow and there are many hours spent in traffic each day. This effects our productivity

levels since people are late for work, it also affects our national interests which makes us less competitive in the global market.

7) Can you identify any issues with how the environment is maintained in St Augustine which may impact on crime, safety, fear of crime and the quality of life?

If so, what is it about those features that cause these impacts?

Police Officer 1: There is very poor lighting in Trinidad and I think this provides a lot of opportunities for offenders. We also have poor security on many of the houses which makes their premises very accessible and easily targeted.

Police Officer 2: Plenty hiding spaces I'd say, all the high green grass and things. We also find a lot of youths hanging about in parks and sporting grounds and things which are not looked after properly, they are very dilapidated. People in St Augustine are greedy too; we have a lot of rental properties here. If the owner is getting his rent he doesn't care about maintenance, the user's safety is compromised here.

They even have an issue with the police station, I'm not comfy here, it's cramped, and you want me to operate productively in these circumstances. It takes away the service I should be providing to the public. 1st division and 2nd division staff which comes from the colonial era, 1st division Officers Park in the compound, 2nd division have to park in the street. I'm vulnerable as a police officer and my property is exposed. If I was comfortable I would serve better as a police officer.

8) Do you think that housing tenure and local demographics in St Augustine has an impact on crime, safety and fear of crime?

If so what is it about these characteristics which cause these impacts?

Police Officer 1: There are a lot of naïve people here due to the student population, people here don't really understand the impact of crime until they are victimised.

Police Officer 2: We have a very politically charged culture. In recent times, ethnicity has come into play. The straightness of your hair and lightness of your complexion has an impact

on your success in life. In the masses this causes distrust, it causes some people to be treated better than others. In a want to feel equal, people do things outside the realm to feel equal. In my policing interaction with the public, people have a distrust of me because I am black. Someone wants to rule the roost; people need to pay attention to the social fabric that is being destroyed. Where do the politicians priorities lie?

There is a huge issue of ethnicity and exclusivity in Trinidad, some are considered the elites of society, and they take care of themselves. The rest just fight for the scraps. Status also impacts on whether an individual is charged for an offence, if someone is found in possession of narcotics and they say they are not theirs; ethnicity will impact on the judge's decision as to whether this is believed or not. Watchmen or other lower class citizens would be charged but not the house owner. This corruption undermines the police force and causes a lot of distrust.

Recently a bill was passed In terms of judiciary; it ensured a higher pay packet and pension. Life expectancy is changing here now too, people are living longer and these impacts on our productivity levels. To get more value out of their work force they are extending the retirement age of workers. This makes fewer opportunities for our youths who then become frustrated and turn to crime. This causes deviant behaviour. Schools only cater to a certain age bracket and then they are expected to gain success but in reality this is a sham and it causes a lot of frustration for this generation of youths.

9) Do you think there are any issues with the use or management of public space in St Augustine which impact on crime, safety, fear of crime and the quality of life?

If so, what is it about those features that cause these impacts?

Police Officer 1: Nothing I can think of, that is our role I guess and we manage public spaces the best we can.

Police Officer 2: I think the entire use of public space lacks management in all types of ways. Even the use of parking facilities, parking on the streets, traffic flow, use of public services.

There are no services in place to support these functions, the police can't do everything, we have enough to do trying to lock all the murderers and rapists up!

10) Can you identify any specific features which enhance or hinder safety and inclusivity in St Augustine and how these impact on crime, fear of crime and the quality of life?

Police Officer 1: CCTV is not very effective here. The rotation of the cameras misses the actual criminal act in which it is trying to capture. Criminals are smart, they just move around the rotation.

Police Officer 2: I think the media bombards people with crime stories which makes them fearful and less likely to integrate. It is also full of adverts and things. What makes success? You have the media putting all these material things on TV which impacts on people's perspective of reality, especially the youths.

11) Can you identify any specific features which enhance or hinder community cohesion in St Augustine and how these impact on crime, fear of crime and the quality of life?

Police Officer 1: People don't look out for each other here. They are very selfish, very busy and very fearful.

Police Officer 2: Politics and race play a part I think. There is a lack of trust towards blacks and I think political affiliation towards one party or another impacts on the ability to integrate.

12) Can you identify any specific features which enhance or hinder community's awareness of problems in St Augustine or how they participate in crime prevention activities?

i) How do you think these impact on crime, fear of crime and the quality of life?

Police Officer 1: I think people are aware about crime, but not to the extent of what it really is. They don't see what we do and we try to cover it as much as possible.

Police Officer 2: When people speak collectively we get a response from authorities. If you are not considered an affluent individual however you are likely to get ignored and your opinions will be devalued... unless it is election time. If you are an elite, or considered

affluent, your financial situation can benefit you when it comes to power and getting what you want here.

Those who are poor just lose hope. When this happens it is the worst thing you can front as a police officer, they are the most dangerous people on the planet. When people feel they have a reason to live, things are different.

The 1990 interaction with Abu Bakr extremists. I'd say we are experiencing a similar kind of build up to that now. There is a lot of social upheaval demonstration cries of inequality and discrimination. I policed during this era and now I am just wondering when, not if, because of the political environment in which we live in. There was a time I recall when there were happy looking people, now everyone is angry. That is a dangerous signal and it doesn't help when the social leaders add to it. Some people just see this climate as an opportunity to see what they can benefit from, there were times we had less, but we had more freedom. Now we have more but we have less freedom. There was also a strive in society when we were more ethical. If we had stayed that way we would be different. People look out for themselves and themselves only.

13) How effectively do you engage with communities in crime prevention activities and what impact do you think this has on crime and fear of crime?

Police Officer 1: The only interaction we have is when we are patrolling the streets. There is no organised interaction with communities, they are very distrustful of us.

Police Officer 2: We recently embarked on the community policing programme. The 999 TV programme used to portray police in an approachable manner. I grew up with that but it isn't like that now. We should be using technology more with Facebook and things to show what is good and bad and indifferent. The more educated we are, the more effective we are. In certain societies the police are a buffer between the elites and the poorer masses. We are here to serve all, but perception in reality is not so, people think that we are only here to serve the status quo.

People have a bad attitude towards the police and what we represent. They think that our

interests lie elsewhere. I think we have a bad recruitment process. Whatever society we have we have to recruit people from those societies but we need to have better standards to promote.

I am in charge of crime patrol and we started hotspot policing. What I have discovered is once you go down to base level with people, some people in society are disciplined, some don't have a clue. What that affords me is to teach or to be taught and to try to enlighten those who have a different understanding of the police. We do some foot patrol but mostly slow driving. This allows people to approach you and for you to approach them.

We engage in community policing; we do charity for houses in distress as a result of victimisation or experience of victimisation. We would also act if we experience distressed households.

14) How prepared do you think local communities are in dealing with major crime problems?

I think they are and they aren't. In this society the perception is, if you are an elite you will get justice, if you are not, you don't. Lots of people have no hope and it is an explosive situation. Murders with no justice cause families to grow up with no trust. This causes them to take justice into their own hands. Danger that is posing people get mistaken for others or if they are in any way connected to the target they will become a victim. Innocent people get caught up and all hope is lost from people who experience this kind of brutality. I myself can see things like this escalating, but how can I be prepared for it if politicians are either blind or ignorant to it.

Appendix G

Community Residents Discussion Guide

Guidelines

- There are no right or wrong answers to the questions, just ideas experiences and opinions which are all extremely valuable even if you consider it not to be
- We're tape recording, one person speaking at a time
- We're on a first name basis
- You don't need to agree with others, but you must listen respectfully as others share their views
- It is important to hear both positive and negative sides of an issue
- It is important for both women's and men's ideas to be equally represented and respected.
- Rules for phones and pagers if applicable: We ask that you turn off your phones or pagers. If you cannot and if you must respond to a call, please do so as quietly as possible and re-join us as quickly as you can.
- Your requirement in this session is to talk to each other in an informal discussion and remain as comfortable as possible.
- Would anybody like to add any more points to this in terms of what they would like to get out of the discussion or what they think should be covered before we begin?

My role as a facilitator

My role here today is as a researcher to facilitate a healthy discussion between the group. The research I am conducting is related to a social needs assessment which will once analysed, will identify potential risks to the local social environment and is therefore very important to the Town and Country Planning Division and yourselves as residents here. I will not be taking part from a personal

perspective since have no experience of living in this area, however I will propose some questions throughout the discussion so that we cover all the research objectives.

Opening question

We've placed name cards on the table in front of you to help us remember each other's names. Let's find out some more about each other by going around the table. Tell us your name and what you like and dislike about the area you live in. I will begin:

My name is Victoria, I like the area I live in because it is quiet and I feel safe. I don't like the area I live in because there is no public transport in walking distance so I have to drive everywhere.

Questions:

Physical Infrastructure

1)What do you think of when you hear the words physical infrastructure?

Physical infrastructure can be anything related to agriculture, public works, pumping stations, telecommunications, transport, roads, bridges, water supply, sewers, electrical grids, and so forth, and can be defined as "the physical components of interrelated systems providing supplies and services which are essential to enable, sustain, or enhance societal living conditions."¹

2) Can anybody explain a particular good or bad experience with the local physical infrastructure?

3)How would you consider infrastructure to impact on your quality of life?

4)How would you consider infrastructure to impact on the way you use the environment?

5)How would you consider infrastructure to impact on crime, or fear of crime?

6)How do you think this impacts on your safety?

7)What is it about this that impacts on your safety?

8)Do you think infrastructure contributes towards the social sustainability of the area?

- Why/how?

Design

- Maintenance

1) What do you think of when you hear the words environmental maintenance?

Environmental maintenance can refer to litter control, maintenance of green space, graffiti removal, control of lost or stray animals, dog fouling and the like.

2) Can anybody think of any particularly good or bad experiences with the maintenance of the local area?

3) How would you consider maintenance of the area to impact on your quality of life?

4) How would you consider maintenance of the area to impact on the way you use the local environment?

5)How do you think this impacts on your safety?

6)What is it about this that impacts on your safety?

7) How would you consider maintenance to impact on crime and fear of crime in the area?

8) Would you consider maintenance of the local area to impact on social sustainability of residents?

- How/why?

-Tenure and demographics

(social, rented, private, communal)

1)What do you think of when I say the words housing tenure?

Housing tenure refers to the financial arrangements under which someone has the right to live in a house or apartment. So this could refer to social housing, private rented, private owned, squatters, shelters etc.

We are also concerned with the demographic make-up of housing e.g. size of houses, age of housing population, genders, ethnicity etc. and how mixed or segregated households are.

- 2) Would you consider the housing tenure of the area to be particularly important to you?
- 3) Would you consider the local housing tenure to impact on your quality of life living in the area?
- 4) How do you think this impacts on your safety
- 5) What is it about this that impacts on your safety
- 6) Would you say the housing tenure impacts on crime or fear of crime in this area?
- 7) How would you consider housing tenure to effect the social sustainability of the area?

-Public open space

(Parks, gardens, vegetation)

- 1) What would you consider to be adequate public open space?

By public we mean anything that is owned by the government or a public body or owned by a private individual which is made available for public use or public access. Open space refers to public access for public recreation, which is outdoors and vegetated. Examples of this could be a public park, a town square etc.

- 2) Would you consider public open space to be particularly important to you?
- 3) How does public open space impact on your quality of life?
- 4) What do you think is good and bad about the current public open space of this area?

- 5) How do you think this impacts on your safety
- 6) What is it about this that impacts on your safety
- 7) How do you think public open space impacts on crime or fear of crime?
- 8) How would you consider open space to impact on social sustainability?

- Safety and inclusivity

(Security, surveillance, increased human activity)

- 1) What do you think of when you hear the word safety?
- 2) What do you think of when you hear the word inclusive?

Safety is the state of being "safe", it is the condition of being protected against physical, social, spiritual, financial, political, emotional, occupational, psychological, educational or other types or consequences of failure, damage, error, accidents, harm or any other event which could be considered non-desirable.

Inclusivity concerns how included members of the public are as one population. So whether members of the community are excluded from society on the grounds of gender, race, class, sexuality, disability, etc.

- 3) How do you think both safety and inclusivity impact on your quality of life living in and using this area?
- 4) Does anybody have any particularly important aspects around safety that they would like to discuss?
- 5) Does anybody have opinions about how inclusive they consider this area to be?
- 6) If you could make your area safer, what would you do?

- 7) If you could make your area more inclusive, what would you do?
- 8) How do you think these changes would impact on your quality of life?
- 9) How do you think safety impacts on fear of crime?
- 10) How do you think safety impacts on actual crime?
- 11) What is it about this that impacts on your safety

Sustainability

Participation, Self-reliance, Mobilisation

- 1) What do you think of when you hear the words social sustainability?

Social sustainability refers to how capable a community is at sustaining itself. So this will depend on their participation with wider organisational bodies, how self-reliant and self-sufficient they are, and how mobilised they are physically and verbally in making decisions for the community.

- 2) How do you think a community could become socially sustainable?
- 3) What would you consider impacts on the social sustainability of the local environment?
- 4) How regularly do you think you participate in local events?
- 5) Do you consider your local environment to rely on outside agencies?
- 6) Would you consider your local community to have good leadership?
- 7) How well organised do you think the local area is in terms of services and amenities?
- 8) How do you think these features impact on your quality of life?
- 9) Would you consider any of these features to impact on your fear of crime, or actual crime in the area?

10)How do you think this impacts on your safety?

11)What is it about this that impacts on your safety?

Community cohesion

1)What do you think of when you hear the words community cohesion?

The concept of community cohesion derived from the UK following some urban riots. Its general meaning considers a common vision and a sense of belonging for all communities, the diversity of people's different backgrounds and circumstances are appreciated and positively valued; those from different backgrounds have similar life opportunities; and strong and positive relationships are being developed between people from different backgrounds in the workplace, in schools and within neighborhoods.

2)Would you consider your local community to be cohesive?

- Why?

3)What do you think contributes towards a cohesive community?

4)Do you think it is important for your community to be cohesive?

- Why?

5)What do you think would/does prevent your community being cohesive?

6)How do you think community cohesion, or lack of, impacts on your quality of life?

7)How would you consider these features to impact on crime or fear of crime?

8)How do you think this impacts on your safety?

9)What is it about this that impacts on your safety?

Awareness of problems

(Empowerment, Engagement with community residents)

- 1) Are you aware of any problems in your area? If so, what?
- 2) What helps/prevents you from being aware of problems?
- 3) What do you think of when you hear the word empowerment?
- 4) How well can you engage with other residents about problems in the area?
- 5) Can anybody give an experience of when they became aware of a problem in the area?
- 6) Do you think becoming aware of problems in the area is important?
- 7) Do you think being aware of problems in the area would impact on your quality of life?
- 8) How do you think this impacts on your safety?
- 9) What is it about this that impacts on your safety?

Agency involvement

(Access to funding and enterprise)

- 1) Are you aware of any agencies making changes to your local area?
- 2) Are you aware of any funded schemes or enterprise being invested in the area?
- 3) If agencies were to, or do invest in your community, what role do you think this should take?
- 4) How do you think agency involvement would impact on your quality of life?
- 5) How do you think invested interest in the area would impact on your fear of crime, or actual crime?
- 6) How do you think this impacts on your safety?

7) What is it about this that impacts on your safety?

Preparedness (disasters, risks, vulnerability etc.)

Human capital (education, skills, training, social/personal attributes)

1) What do you think of when you hear the words community preparedness?

Community preparedness is the ability of communities to prepare for, withstand, and recover, in both the short and long terms, from public health incidents. By engaging and coordinating with emergency management, healthcare organizations (private and community-based), mental/behavioural health providers, community and faith-based partners,

2) Would you consider your community to be prepared?

3) What do you think would make a community more or less prepared?

4) How do you think being prepared would impact on your quality of life?

5) How much of an impact would you consider these features to have on your fear of crime, or the actual crime in the area?

6) Is there any features you could think of which would restrict your community being prepared?

7) How do you think this impacts on your safety?

8) What is it about this that impacts on your safety?

Appendix H

Pilot study Part D: Section 3 Community Focus Groups

A pilot study was conducted with a community group in Northumberland in order to confirm that the focus group discussion would provide useful responses from participants. The focus group consisted of 8 participants from a community group in Northumberland who engaged in the research on a voluntary basis. The focus group used the same discussion guide which was used in the real study and explored the indicators of social sustainability with local residents in order to identify aspects which impact on crime, fear and their overall quality of life.

Whilst the discussion was short, the focus group proved very successful having identified a number of issues which are considered impactful to communities and the analytical method was considered sound. What was noticed however was that more comprehensive indicators such as community preparedness and community participation needed some explanation in terms of its definition before valuable responses could be reached. In this sense it made the researcher vigilant to the possibility of participants being unsure of some of the questions and to be prepared for some explanation before the discussion could begin. Also like the previous pilot for Section D: Part 1, it was noted that coding of each of the categories was required so that a more thorough analysis could be conducted. It was also considered that it may be a useful task to take some basic demographics from each participant in order to provide context to their responses. No further adjustments were needed for the real study. An example analysis sheet can be found below.

Example Analysis Sheet 1

Participants:	8 Participants: Northumberland
Date:	Saturday 12 th May 2014
Time:	10am
Location:	Cramlington community centre

	Aspect	Theme	Category	Feature	Impact
1	Negative	Demographics	Community groups	Travelling communities	Perceived risk of offending and increased risk of victimisation
2	Negative	Infrastructure	Public transport	Frequency of busses	Risk to victimisation
3	Negative	Agency involvement	Amenities	Activities for youths	Youth boredom causes loitering and ASB
4	Negative	Safety	Security features	CCTV in fly tipping areas	Lack of CCTV security enables fly tipping offenders to pass through area
5	Negative	Safety	Guardianship	Beach areas are secluded with no guardianship	Causes youth loitering and increases fear
6	Positive	Infrastructure	Social Media	Reports of incidence on social media	Increases awareness and preparedness
7	Negative	Safety	Policing	Police detection rate	Time wasted on irrelevant things increases concern over police resources
8	Negative	Awareness	Education	Educating children about history	Lack of awareness causes disrespect and potential ASB
9	Negative	Design	Lighting	Poor lighting in rural areas	Increases fear
10	Negative	Design	Maintenance	Poor maintenance in built up areas	Changes use of public space and reduces quality of life

1 1	Positive	Inclusivity	History	Coal mining traditions	Coal mining communities have created a tight knit community
1 2	Positive	Cohesion	History	Local amenities	Local amenities bring people together
1 3	Negative	Governance	Employment	Recession	Impacted levels of poverty and overall quality of life

	Quote
1	P4: There are a lot of travellers up the road there and sometimes they make me a bit concerned because I've heard rumours of them burgling people's houses and robbing people. I'd be reluctant to go out on my own while they are around, especially at night.
2	P2: Transport is a bit of an issue here, we sometimes have to wait over an hour for a bus and this can be quite dangerous if your standing alone at night. I tend to avoid it if I can.
3	P6: I don't think there's much for kids to do here. No after school clubs or activities for them to engage in. This is a bit of a problem because you tend to find them hanging around the shop corners and drinking. This really intimidates me
4	P4: We have a huge fly tipping issue here too; I think the council need to put more CCTV up. I dread to think what kind of people are driving through this area if they do things like that
5	P7: I'd like to go to the beach more but you find that's also another place that youths hang out because there isn't much control or people to keep an eye on them. I really don't like being around them on my own
6	P3: I find that social media is useful for feeling in control. If something happens in the area you can guarantee it will be on Facebook within 5 minutes. I think this is positive because you know to avoid certain areas for whatever reason and the more people who are aware, the quicker the correct agencies will be contacted.
7	P2: I think the police like to show their presence and make communities feel safer but honestly I think they waste time on things which are so irrelevant which makes me wonder if the correct resources are being allocated to the real problems. I was driving through Hexham once and a police officer knocked on my door 3 weeks later to say an off duty officer had seen me drive down a slip road whilst on his bike and said that I looked unsure of where I was going and that I might be a danger to the public. I thought really?
8	P8: I think there is a lot more education needed in terms of making youths more aware of the real world. It worries me the lack of knowledge that some kids have about their history and heritage and honestly I think don't think they have enough respect for the hard times that people had before their generation. I think a lack of respect makes kids a bit rowdy and just have a general negative attitude which can be quite intimidating.
9	P6: Some areas out in the country are a bit scary at times, the lighting isn't great and there are a lot of dark roads with no lighting at all. When you have to use public transport this can become a bit of an issue
10	P1: Some of the more built up areas can be very messy and dirty and there is sometimes dog foul on the road. This doesn't create an enjoyable place to be in and it makes me feel a bit on edge

11	P6: I think around here especially we are quite a tight knit community due to the history of coal mining. I think this makes us a very inclusive community and we do feel supported by one another.
12	P7: I agree, our families all know each other through our grandparents and we drink in the pubs our grandparents drank together. It is very special
13	P1: I think the government has a lot to answer for in terms of work though especially with all the cuts and things. A lot of people round here are tradesmen and they are entering a state of poverty now. Im just waiting for things to erupt, it can be quite tense.

The following analysis sheets document the focus group content of local community residents

St Augustine Focus Group

Participants:	7 Participants: St Augustine Residents P1: Male- Business owner- Mixed race- 52 P2: Male- Primary school teacher- Mixed race- 40 P3: Male- Shop owner- East Indian- 48 P4: Female- Administrator- East Indian- 51 P5: Female- Sales Consultant- Afro Caribbean (Mixed Caucasian)- 41 P6: Male- Mechanic- East Indian- 55 P7: Male- Caretaker- Afro Caribbean-46
Date:	Saturday 12 th July 2014
Time:	14:30
Location:	St Augustine, Curepe

	Code	Aspect	Theme	Category	Feature	Impact
1	0Aia1	0/Negative	A/Physical Infrastructure	i/Transport	a/Illegal taxis	1/Robbery opportunities
2	0Gia1	0/Negative	G/Inclusivity	i/Population density	a/Amenities	1/Over-populated spaces causes weak social ties and crime opportunities
3	0Aiib1	0/Negative	A/Physical Infrastructure	i/Transport	b/Traffic flow	1/Easy access and egress for assault/robbery
4	0Kia1	0/Negative	K/Agency Involvement	i/Policing	a/Police beats	1/Inadequate patrolling in high risk areas increases vulnerability
5	0Aia1	0/Negative	A/Physical Infrastructure	ii/Urban form	a/Historic planning	1/Permeability of main arterial road provides access and egress for crime
6	0Aiib1	0/Negative	A/Physical Infrastructure	ii/Urban form	b/Land use	1/Congestion at intersection provides opportunities for crime

7	0Mja1	0/Negative	M/Governance	i/Funding allocation	a/Strategic plans	1/Ineffective budget allocation to target priority issues
8	0Kib1	0/Negative	K/Agency Involvement	i/Policing	b/Law enforcement procedures	1/ Ineffective law enforcement increases crime
9	0Kic1	0/Negative	K/Agency Involvement	i/Policing	c/Police response to reporting	1/Reduces public confidence in police
10	0Kid1	0/Negative	K/Agency Involvement	i/Policing	d/Offender Rehabilitation	1/ No transition into society, increases fear and risk of recidivism
11	0Kiia1	0/Negative	K/Agency Involvement	ii/Security	a/UWI private security service provision	1/ Private security boundaries create a false sense of security
12	0Aic1	0/Negative	A/Physical Infrastructure	i/Transport	c/Parking facilities	1/Lack of parking increases traffic congestion and crime
13	0Kie1	0/Negative	K/Agency Involvement	i/Policing	e/Police branches accountability	1/Poor service provision of police branches reduces confidence
14	0Aiic1	0/Negative	A/Physical Infrastructure	ii/Urban form	c/Economic zones	1/ Close proximity to low income areas increases fear
15	0Aiic2	0/Negative	A/Physical Infrastructure	ii/Urban form	c/Economic zones	2/ Fortress mentality and increases fear and opportunities
16	0Aiia1	0/Negative	A/Physical Infrastructure	iii/Planning regulation	a/Licensing for commercial zoning	1/ Lack of commercial dispersion increases population density and crime
17	0Fiia1	0/Negative	F/Safety	iii/Planning regulation	a/Adequate security control	1/Lack of crime prevention for vulnerable development plans
18	0Mib1	0/Negative	M/Governance	i/Funding allocation	b/Welfare and crime prevention	1/Welfare funding is unsustainable
19	0Aiic3	0/Negative	A/Physical Infrastructure	ii/Urban form	c/Economic zones	3/Close proximity to Bangladesh (low income crime hotspot) causes fear
20	0Fiib1	0/Negative	F/Safety	iii/Planning regulation	b/Regulation of squatter settlements	1/ Squatter settlement is a hotbed for crime with no management
21	0Miia1	0/Negative	M/Governance	ii/Politics	a/Political loopholes	1/ Crime hotspots ignored due to political support
22	0Bia1	0/Negative	B/Design	i/Maintenance	a/Design and management of access routes	1/Recreational facilities abandoned due to fear causes community decline.

23	0Miiia1	0/Negative	M/Governance	iii/Local government services	a/Environmental management and maintenance	1/Lack of service provision by government reduces quality of life
24	0Miiia2	0/Negative	M/Governance	iii/Local government services	a/Environmental management and maintenance	2/Lack of planning and sustainability in poverty reduction
25	0Miiia3	0/Negative	M/Governance	iii/Local government services	a/Environmental management and maintenance	3/Lack of adequate services for community development
26	0Kiia1	0/Negative	K/Agency involvement	iii/Social service agencies	a/Youth opportunities	1/No prospects reduces motivation and incentive to excel
27	0Miva1	0/Negative	M/Governance	iv/Planning process	a/Community involvement	1/Developments are not needs led or bottom up therefore unsustainable
28	0Miiia4	0/Negative	M/Governance	iii/Local government services	a/Environmental management and maintenance	4/Lack of maintenance of amenities causes crime and abandonment
29	0Aia2	0/Negative	A/Physical Infrastructure	ii/Urban form	a/Historic planning	2/Physical infrastructure designed for cars not people- restricts public use
30	0Aiiic1	0/Negative	A/Physical Infrastructure	iii/Planning regulation	c/Use of commercial district after dark	1/Increases vulnerability and increases opportunities
31	0Mvf1	0/Negative	M/Governance	v/Policing	f/Police corruption	1/Police involved in criminal loitering around commercial districts
32	0Aiiic1	0/Negative	A/Physical Infrastructure	ii/Urban form	c/ Economic zones	1/ Close proximity to low income areas increases fear
33	0Cia1	0/Negative	C/Tenure	i/Social housing	a/Proximity between tenure classifications	1/Relocation of social housing has increased vulnerability and fear
34	0Dia1	0/Negative	D/Demographics	i/Socio economic status	a/Vulnerable classes of society	1/Students are unaware of risks and vulnerable to threats
35	0Mvia1	0/Negative	M/Governance	vi/Employment	a/Graduate employment	1/Not enough jobs to accommodate graduates
36	0iia1	0/Negative	J/Awareness	i/Migration patterns	a/Student home location	1/Students are unaware of risks and vulnerable to threats

37	0Ciia1	0/Negative	C/Tenure	ii/Privately rented properties	a/Rental property increase and migration	1/Increase in rentals increases population turnover and migration
38	0Jiib1	0/Negative	J/Awareness	ii/Socio economic status	b/Reliance on public transport/vehicle ownership	1/ Students forced to use public space more due to income and vulnerable to outside threat
39	0Aiia1	0/Negative	A/Physical Infrastructure	ii/Urban form	a/Historic Planning	1/Permeability of main arterial road provides access and egress for crime
40	0Iia1	0/Negative	I/Cohesion	i/Population turnover	a/Length of residence	1/Population turnover reduces social ties
41	0Kig1	0/Negative	K/Agency Involvement	i/Policing	g/Control and regulation over squatter settlements	1/Squatter settlements look for crime opportunities in surrounding areas
42	0Kih1	0/Negative	K/Agency Involvement	i/Policing	h/Police patrol in squatter settlements	1/Lack of police patrols in Bangladesh create a hotbed for crime to flourish
43	-	-	-	-	-	-
44	0Diia1	0/negative	D/Demographics	ii/Immigration	a/Deportees and crime stats	1/Deportees from US prisons causing gang wars
45	0Ava1	0/Negative	A/Physical Infrastructure	v/Commercial industry	a/Business turnover	1/Wealthy business owners children become targets for kidnapping
46	0Miii7	0/Negative	M/Governance	iii/Local government services	a/Environmental management and maintenance	7//Lack of management of recreational facilities for public safety
47	0Miii4	0/Negative	M/Governance	iii/Local government services	a/Environmental management and maintenance	4/Lack of maintenance of amenities causes crime and abandonment
48	0Miva1	0/Negative	M/Governance	iv/Planning process	a/Community involvement	1/Developments are not needs led or bottom up therefore unsustainable
49	0Miva1	0/Negative	M/Governance	iv/Planning process	a/Community involvement	1/Developments are not needs led or bottom up therefore unsustainable

50	0Mjb1	0/Negative	M/Governance	i/Funding allocation	a/Strategic plans	1/Ineffective budget allocation to target priority issues
51	00Iia1	00/Positive	I/Cohesion	ii/Race	a/Racial harmony	1/Trinidad is a tolerable society and accepting of multi-racial composition
52	0Iiia1	0/Negative	I/Cohesion	iii/Class	a/Socio economic status??	1/Class causes divides and conflicts in society
53	0Mvii1	0/Negative	M/Governance	vii/Ministries	a/Corruption	1/Loopholes in government allow things to happen
54	0Mvb2	0/Negative	M/Governance	v/Policing	a/Law enforcement procedures	2/Lack of enforcement allows law breaking with no consequences
55	0Mvi1	0/Negative	M/Governance	v/Policing	b/Crime Types	1/Domestic violence rife- causes break down in family cohesion
56	0Kiva1	0/Negative	K/Agency Involvement	iv/International support	a/International Funding Criteria	1/Country is seen as rich and does not qualify for 3 rd world support
57	0Jib1	0/Negative	J/Awareness	iii/Funding allocation	b/Government spending	1/False sense of economic stability with little funding allocation
58	0Kva1	0/Negative	K/Agency Involvement	v/Local community services	a/Community development	1/No support services in place to positively bring people together
59	00Iiva1	00/Positive	I/Cohesion	iv/Patriotism	a/Culture	1/Trinidadians have pride over their country when people are watching
60	0Giia1	0/Negative	G/Inclusivity	ii/History	a/Political and religious conflicts	1/Polarisation in community restricts participation
61	0Miib1	0/Negative	M/Governance	ii/Politics	b/Political scepticism	1/Community institutions have scepticism due to political espionage
62	0Biib1	0/Negative	B/Design	ii/Layout	b/ Physical Race & Class Divide	1/ Design conditions and arterial road signifies a divide between race + class
63	0Aiid1	0/Negative	A/Physical Infrastructure	ii/Urban form	d/Vehicle and pedestrian flow	1/Dense vehicle and pedestrian traffic increase anonymity
64	0Jiva1	0/Negative	J/Awareness	iv/Politics	a/Scope for independent thinking	1/Political conflict restrict independent thinking

65	-	-	-	-	-	-
66	0Jiva1	0/Negative	J/Awareness	iv/Politics	a/Scope for independent thinking	1/Political conflict and propaganda restricts independent thinking
67	0Hia1	0/Negative	H/Sustainability	i/Politics	a/Political accountability	1/No pledges ever materialise which loses public confidence
68	0Lia1	0/Negative	L/Preparedness	i/History	a/Education	1/No lessons have been learned from the past to prepare for the future
69	0Lib1	0/Negative	L/Preparedness	i/History	b/Disasters	1/Nothing bad has happened to require change or preparation
70	0Mic1	0/Negative	M/Governance	i/Funding allocation	c/Disaster risk reduction	1/No money allocated to making fundamental changes for disaster risk
71	0Lia2	0/Negative	L/Preparedness	i/History	a/Education	2/Not enough education to understand how risks develop
72	0Hiia1	0/Negative	H/Sustainability	ii/Planning	a/Sustainable development	1/Developments are not planned for the future or the intended processes
73	0Hiiia1	0/Negative	H/Sustainability	iii/Place making	a/Service provision	1/St Augustine does not maximise on service provision for sustainability
74	0Mid1	0/Negative	M/Governance	i/Funding allocation	d/Local community development	1/Government money reaching local communities is sparse
75	0Mviiiia1	0/Negative	M/Governance	viii/Accountability	a/Service provision	1/Services provided by Government organisations are not delivered
76	0Hiva1	0/Negative	H/Sustainability	iv/Community Initiatives	a/Outcomes, targets, measurement, evaluation	1/Government regimes are not well planned and are unsustainable

	Code	Quote
1	0Aia1	P1: 1:20: "I been robbed twice, the first time was taking a taxi from Curepe junction at night, the second was taking a taxi in broad daylight from the highway into Port of Spain, apparently going into random taxis is not safe in Trinidad"
2	0Gia1	P3:7:00: "In St Augustine you have good access to services and its very convenient, it's close to the priority bus route too which goes into town, I think this attracts a lot of different people to the area"
3	0Aiib1	P3:7:20: "There's also a lot of traffic, not in terms of congestion but in terms of flow of traffic from the outside. Because of this, it wouldn't be the kind of place I would walk along at night...the Priority Bus Route runs right through St Augustine and it is one of the major roads, it is the east west corridor for Trinidad and anybody can stop and jump out and snatch your purse".
4	0Kia1	P3: 7:30: "It's [the PBR] also not policed. When I had my purse snatched the ice cream man was less than 150 metres from the police station. They just get away with it, there is a lack of enforcement"
5	0Aiia1	P2: 11: 20: "I have always found that there is a direct link between the road networks and crime here... You always know when you are in an old British colony* ... because the urban planning is situated along main arteries and everything exists around these main arteries. Unfortunately, our generation has inherited this from the British and it's too expensive to have to go and uproot people to build new roadways or break the arterial roads into smaller capillaries. All of the crimes here seem to be geographically located around these intersection points."
6	0Aiib1	St Augustine is about walking distance away from the biggest busiest intersection in Trinidad [Curepe Junction]. You have the whole of the North South East and West converging on that junction there. Then you have all of these small buildings, nothing is spread out or diversified you know... there is also a huge lack of planning that the government refuses to acknowledge in terms of where particular businesses should go. Curepe junction is an assortment of fast food places, doctor's offices, small little shops but nothing is thought through in terms of how they contribute negatively to the environment."
7	0Mja1	P2: 14:20: "As far as I can remember Curepe junction has always been a hotspot for crime, we could come up with a hundred ways to improve and change the planning structure but the government* wouldn't make any changes, they would not allow it because there is just too much cost involved and too much culture involved". P2: 14:36: "When you have so many places concentrated into small geographic spots and zones, you always see a certain amount of crime evolving because you have X amount of people working in these areas and they then become targets to people coming into the community or passing through on the main arterial roads.
8	0Kib1	P2: 16:38: "Outside of the actual crime there is really no type of order. When crime is detected and criminals are apprehended, that's where this all falls through now. There is nothing much been done on the order side. You have a bunch of people in prison, cases that are drawn out for years and years. Most of these and the people in jail will probably just get a slap on the wrist".
9	0Kic1	P2: 18:44: " If I went to the station to report that [threatening behaviour], the police would just tell me I'm wasting their time"
10	0Kid1	P2: 19:00: "These two guys about 3 years ago held up a neighbour and beat him almost to death. They got arrested, they pleaded guilty and they got sent down. Three years later, you see these guys walking down the road. However they got

		out, the laws granted X amount of years in jail and they got let out with no rehabilitation. These guys are probably the biggest threat to our community now because nothing has changed and if anything they are worse now for being in jail”
11	0Kiia1	P4: 20:35: “A major problem in Curepe is that outside the university fence there is no security for students but inside there is (false sense of security). We have loads of crime, assaults, robberies, kidnap, carjacking”
12	0Aic1	<p>P4: 21:00: “Recently we’ve seen a number of bars going up in the area. Town and Country or whoever it is giving the approval, giving approvals for casinos and bars opening up without any parking facilities. So there are cars all over the place and they blocking up all the roads so you can’t get through anywhere. Strange to say, the man who owns the casino on Bellsmythe street is a Judge!</p> <p>P2: “And when you have lack of parking and you think of somewhere like Curepe junction, you just add to all the congestion. So your increasing the risk to yourself and others that are travelling to be held up in these congested places. The KFC there on Curepe junction takes in more than 200,000 TT\$ per day, but they have a parking space for 2 cars... So it’s the bars... the fast food outlets...the vendor at the side of the road...the schools... but these areas cannot manage that traffic. What would normally be a 3 minute drive, turns into a 1.5 hour bumper to bumper traffic jam. There is a lack of planning that goes into traffic control. This makes crime opportunities so easy to exist. You have people walking up to cars and grab their jewellery off their neck or snatch their bag”.</p>
13	0Kie1	<p>P4: 25:00 “The transport police do nothing!”</p> <p>P5: “And people don’t report it, people know you report that, you wasting your time”.</p>
14	0Aiic1	P3: 29:30: “You find that affluent areas with high walls etc are sandwiched in between lower income areas. People don’t use the police for social security. They use private services to secure their homes with high walls and barbed wire and alarm systems. These communities come together to create a social defence against outside elements.
15	0Aiic2	P2: 29:36: “You have no choice but to exist in these spaces [affluent] where crime is just down the road where you’re going to go”.
16	0Aiia1	<p>P3: “But one of the things you will not see in these areas [affluent] is commercial behaviour, you don’t see a rum shop, you don’t see a bar, you don’t see a fast food outlet...</p> <p>There are no commercial activities happening in the suburbs. The commercial areas were zoned to particular places. North and south of valasyan for example youre not even aloud to have a registered business on your premises. But it is the complete opposite to somewhere like here in Curepe and areas of St Augustine where again the culture is if you don’t have a job and you have no money you set up a stall in the front of your house and sell mangos off your tree. That might eventually lead to a rum shop or a little restaurant. What you have is an assortment of commercial activity taking place in what “used to be” residential areas... So now you have people coming into these areas with cash in their pocket and that’s what lures the criminals in.</p> <p>P4 “These are the places you find different classes of people, the people in Mercedes with 200,000\$ in their pockets are then mixing with the pauper on the street”</p>

17	0Fiia1	P3: "If you have businesses like casinos etc. you have to have support services in place for those particular types of crime".
18	0Mib1	P4: 39:50: "In the 1970s you had a strong community who decided that unless you could change the socio political culture, we heading into crime. We knew that all those girls and boys coming out of secondary school would have no real job or future and they gunna just end up like that. We set up a community organisation to do things like sports, culture and education lessons for them so they could pass their GCSEs. Up till now we still have some of those things going. We knew then that this is where the country is going. I know people who work in the world bank and the IMF the international monetary fund, they say they know that the Trinidad government spares X amounts of millions on welfare but that is the way the country is going if you don't do that [welfare]. You have people using the crime thing to fund criminal activity then you have people who fighting up with it."
19 20	0Aic3 0Fiib1	P4: 42:25: "Part of the problem with Curepe junction is that there is a lot of child vagrancy and prostitution. They have 8 and 10 year old girls out at that junction. Now how are they going to design out Bangladesh, its right in the heart of the St Augustine education city. It is a big squatter settlement.
21	0Miia1	P4: 42:40: "It [Bangladesh] has never been moved for 20-30 years, every government depends on this block of people to vote for them. They are not gunna do anything about it and that place is a hot bed, a germination of crime and criminal activity right there. They move from there and they rob people from all about. The police station is here [points] and Bangladesh is right there over the PBR".
22	0Bia1	P2: 43:37: "The infrastructure that has to do with sports, playgrounds, pan yards. Do those things bring any value to the community? P4: "They do, up to now, and they could but at a very low level because people hardly want to walk down the back road at riverside because you have a big cricket and football ground which is a big facility because you just don't know who your gunna meet down there because Bangladesh is right there, it is just north west of Bangladesh. That was a big long standing institution. P2: " And Curepe savannah"
23	0Miia1	P4: 47:10: "If you want to improve the education city you have to provide certain basic things. Things like free wifi to improve communication but who gunna pay for that? ... Moving the dog faeces, the garbage, they get in peoples way, they having to dodge mountains of garbage on the street and there's rats everywhere, it just stresses people out unnecessarily".
24	0Miia2	P2: 49:10: "All of the government parties were supposed to be using sport to pull people out of poverty. Curepe savannah used to be used to kick ball and socialise years ago and you have so many poor people living around the savannah. The government's idea of fixing that savannah was putting up some new goal posts and some lights for people to play in it".

25	0Miia3	P1: 49:25: "But there is no structure, no organisation around the community sport to make people excel or get better at what they do. The government's idea of sports in Trinidad is to put a playground there for them to go and play".
26	0Kiia1	P5: 50:34: "We have no talent scouts working for the ministry of sports in Trinidad. Absolutely none. If you are Trinidadian, you can decide to go and play for the national team in any sport that you want to because there's no organisation that really look or creates or nurses real talent and I think that's one of the failings that we have when it comes to our youths in society; their talent is wasted.
27	0Miva1	P7: 53:26: "The way that environmental maintenance is done right now is that it is all given to contractors. The lowest bid wins. The functional design specifications of what repairs are to be done are normally done by a next contractor. The community has no say in it in terms of what they want or what they should actually do here. The community as far as the government gets involved, they don't have any say in what should actually be done or the design stage".
28	0Miia4	P6: 54:34: "One of the things with some recreational grounds is that criminals would use this space to park up their cars, drink and smoke. The community said to the government if you lock up the grounds with padlocks you will reduce that. And that actually worked a bit. But we lack now in any maintenance of public infrastructure."
29	0Aiia2	P7: 56:28: "Trinidad don't design for people, we design for cars. 20 years ago, pavements didn't even exist in Trinidad. We just have dug drains to allow the water to flow. Now the government just covered them and make them pavements, how are people supposed to use these properly, it's just not safe."
30	0Aiiic1	P1: 49:50: "I think time has a lot to do with it. Back in the day* if you weren't home before the street lights come on, you in big trouble. Now the commercial activities are open at all hours, late at night all over the community and it is not centred to any geographic area. You now have casinos and bars open until 3, 4, 5 o'clock in the morning. We have a bar near Curepe junction that doesn't even close anymore! Every time you have a commercial place open you still have an exchange of funds from one person to the next. You have people who are running an establishment in a residential area, money coming in; money leaving at all hours and all these things create opportunities for criminals".
31	0Mvf1	P7: "There is also a criminal element that congregates in these places. This even includes the police."
32	0Aiic1	P3: 1:07:02. "I definitely think that these low income residents, these types of communities that bring these types of people like that into places that are well established and linked and tight knitted would bring fear".
33	0Cia1	P6: 1:08:10: "When this place fills up, they moved people from La Hocketa* and Malone* and people were deadly scared because they moved people over from Laventille. They moved them because they wanted to move public housing away from the city at the time".
34	0Dia1	P4: 1:08: 48: "I would say that race and demographics are an issue in some communities. In this place it is very mixed" P5 "And the student population in this community is a bunch of naïve people who really don't know who really don't care about the past 20- 30 years or take any interest in the socio economic and socio political development of this country and are more interested in getting their degree. So they are very unaware of the risks posed to them"
35	0Mvia1	P6: 1:09:35: "And most of them think they are gunna get a big one [degree] then they come out with little menial jobs all about the place"
36	0Jia1	P4: 1:09:40: "Most of them [students] come up from the south and reside in the north for university, the people from the North West send their children abroad and the people from south send their children up north".

37	OCiia1	P2: 1:10:36: "Curepe has become a tenant's capital. There is a huge percentage of Curepe which is all rental units. It is now a rental town and I think this is bad because it's hard to control. Its not all students who rent up here now so these people are mixed. 15-20 years ago this area was primarily for students ... during the vacation period when everybody goes home for three and four months the owners of the properties realised it was better for them to rent a 1 or 2 bedroom apartment at the same cost to someone who wants to move into the area who is not a student and that's what is happening here. Most of the old rental apartments or rooms that were created for students 20 or 30 years ago, more than half of them are now populated by people who are not from the area. They move here because the location of St Augustine to mass transit and proximity to port of Spain. So now you have a lot more people walking the streets during the night and during the day and this creates a bigger opportunity for criminals. It is far too overpopulated by people who don't have knowledge of the area and nobody knows each other anymore"
38	OJiib1	P1: 1:12:46: "Most of these people [students] who move into the area also have a fairly low income. They are unlikely to own vehicles and they rely a lot on public transport which is not safe".
39	OAiia1	P2: 1: 13:20: "Also geographically St Augustine is vulnerable because it is in the centre of the island. People come from north south east and west and they can just pass through with many opportunities present... We are a frontier town".
40	Olia1	P4: 1:15:00: "This place is being converted from an old village, residential, cohesive community where everybody know everybody family and thing, into one where people are coming and going and nobody knows each other... It has a high turnover of people and nobody stays". P1: You can't get embedded in your community and get to know your neighbour and that kind of thing. P2: You come in, you go to work or university, you live here two, three years max then you move on. Nobody settle here.
41	OKig1	P4: 1:16:50: "Squatting is out of hand in this country and it's a problem because you have a situation for example where there is an old squatters sight but people tend to believe that you have this space here that have 100 squatter families in it and that is going to be so forever; no. Sometimes these families move on and new people will move in these spaces but we don't know who these people are... there is a great risk that the new people who come in to squat there are trouble". P5: 1:18:00: "Up the hill in the mountain, the squatter settlement up there, people moved there because they genuinely couldn't afford to buy land and they wanted a place to call home. Compare that to Bangladesh, you have a bunch of people from various places who come to seize the land and have such different attitudes. It is not that of wanting a family life or making a home for their children. They behave like opportunists and they have an attitude which is we will take what we want, and that goes above having a family and making a life for their children". P1: Their intention is not to come and settle and become part of the community but it is quite opposite... they come here to rob and to see how much they can get from these people here".
42	OKih1	P4: 1:21:01: "The police don't go in Bangladesh*, you could kidnap somebody and put them in there for months or years and they would never find them!"
43	-	P6: 1:22:40: "And the murderers are getting younger and younger now. They not afraid to go kill somebody for turf or drugs or whatever and you know, this all comes from a get rich fast or die trying mentality, it come from American culture, black American culture!" P4: It all driven by the bandit woman, she is not a thief you know, she is the concubine of the bandit man! She wants her

		nails done, she wants hair, she wants footware, she wan't the most expensive hijab, that is the woman. I learned this from the bandit men themselves in Lavantille,
44	0Diia1	<p>P3:1:25:00: "One of the major problems that we have right now is the exporting of major criminals back to Trinidad, what we call the deportees. You could have lived in the states and left here when you were 1 year old. You could have never came back to Trinidad since you are 1 year old. You could be 50 years old now and convicted of a particular crime in the states but because you were born in Trinidad, once you have served your time, you are sent back to Trinidad.</p> <p>P2: "Now a lot of the major crime that is happening in Trinidad is these ex criminals from the United States who are very well seasoned in US type crime and when they come to Trinidad they actually breed a group of kids into understanding how to do things and about the gang cultures and they bring those teachings to Trinidad. They become the new teachers and the mentors for a new wave of criminals in Trinidad.</p>
45	0Ava1	<p>*Anthony Norman Sabga grandson case (look into anti-kidnapping squad)</p> <p>P2: 1:26:01: "Anthony Norman Sabga is a billionaire and the ransom demand for his grandsons kidnapping was 1,000,000 US\$. This was not the usual ransom standard for Trinidad, it would normally be around 10,000 US max. When Sabga paid that ransom a new industry of crime was born in Trinidad. The following year there were 300 kidnappings for ransom in Trinidad. It went from 0 to 300 in one year. This affected us as a community, if you own a business in Trinidad your kids now become a target. This made most wealthy people in Trinidad, especially the Indian population send their kids overseas".</p>
46	0Miiia7	P5:1:29:43: "We don't have enough open spaces, we don't have enough spaces to recreate and recreate safely. The places we do have are not properly managed and I don't want my kids playing in there late at night"
47	0Miiia4	<p>P2: 1:30:10: "These places [open spaces] should be refurbished, put in lights, put in fences, cut the grass, manage the garbage, think about what activity is going on and what we want to use it for. We should do this instead of spending a billion on things now which still can't open [referring to a newly built stadium]. These places all have poor lighting, everything is rusty, there are no management or maintenance of these facilities, they are just hotbeds for crime"</p> <p>P3: "It is a part of the 3rd world mentality, legacy and curse that a government give X amounts of money to put up a structure but we don't think about anything after that. We don't maintain it! It becomes dilapidated, people start taking it over, the vagrants, the prostitutes, the criminals".</p> <p>P4: "There are no owners or users. And these people create breeding grounds for negativity".</p> <p>P3 "The sports institution (ministry of sports), the governments owns these things but they don't look after it and nobody knows who is supposed to look after it".</p>
48	0Miva1	P4: 1:33:59: "There is no public consultation for changing the use of places. The government steps in and turns open green space into a concrete jungle and we know nobody is gunna maintain that"
49 50	0Miva1 0Mjb1	P6: 1:35:25: "The communities in Trinidad, the finances for the community, the garbage collection, sporting grounds, fixing the roads. The moneys coming from that are given through local government to regional corporations; they behave somewhat like the government. There is lack of transparency on how they farm work out to contractors. Also only contracts which carry political points are managed and get done. And only when a community take it upon themselves to burning tyres or blocking up a road the money comes out of the government. Whatever side you take, it's the same shit

		but a different day. Nothing fundamental ever changes and it is an ongoing battle for the government to actually listen to the voice of the people”.
51	00liia1	P4: 1:37:04: “As a culture we are a very tolerable society. There is a good and a bad to that, but on the good side we aren’t like the rest of the world. When it comes to inclusivity, my generation didn’t grow up to be racial or have religious bias. On every street you will see a family with different religion”
52	0liia1	P7: 1:38:28: “I think that this community is pretty much a model in terms of religion and ethnicity and all of that. I do think that there is an issue of class and I think this is a major problem in society as a whole now. If nobody has credibility like the politicians and things, why should we the people be called criminals? The more I think about it I realise we really not a country anymore.
53	0Mviia	P1: 1:39:00 “Our procedures do not work and they are not meant to work and whatever happens, happens because
54	0Mva2	whoever wants it to happen makes it happen. That’s not a country but that’s what Trinidad is and everybody see that so nobody cares anymore”.
55	0Mvb1	P4: 1:40:13: “Domestic violence is a huge issue in our society. These conditions effect family cohesion and things”
56	0Kiva1	P5:1:41:15: “When it comes to funding and reliance on outside agencies, Trinidad don’t have that kind of culture compared to some of the other islands. We don’t even qualify; we rank as a developed country economically. We hardly have much experience like you have in the other islands of NGOs getting money from agencies in Europe and the States etc. Trinidad never had that kind of culture; we set out to rely on our own efforts and thing.
57	0Jib1	P3: “I also think as a community we fail to see those things as well because we grew up in an oil based economy; the money is always there. It’s like you were born into a household where your parents have millions of dollars that they inherited but we as the kids don’t ever really look to see if those millions of dollars were sustainable, we have never been frightened of poverty and we have never been frightened of an economic collapse. Probably some of the older ones amongst us in the early 80s saw a little tinge of that when we hit a recession and the small firms folded up but the new generation have not seen that. So I guess our generation ignores it, we knows that it exists, you maybe look over your shoulder and you may think that it’s there but you ignore it because you don’t think that the signals are there”.
58	0Kva1	P2:1:44:01: “There are absolutely no services in place to bring communities together. We are a very polarised public, the things that bring us together with the exception of sports in a team or as part of a group will be politics and this is what I hate about Trinidad. Unfortunately Trinidad is very polarised when it comes to politics. Polarised being that people say that the Blacks vote for the PNM and the Indians vote for the UNC. I don’t think there is anything that brings us together to look for issues or work together. The impact of this is very negative because we struggle to get people to come together to improve lives or places. People just wouldn’t do it; for them they just don’t want to do it because they don’t have a common ground and they have no support behind them. Nobody cares. But if you find a common factor, politics, sports, religion, people will show up.
59	00liia1	P4: 1:48:00: “I’d say we have a pride amongst Trinidadians. Internally we have religious spats when the rest of the world is not looking in. But when they are looking in, we are one Trinidad and Tobago. We are a very multi-religious and multi-racial society which we are proud of and those who disagree will not open their mouth because we need to protect that feature that we have. At the same time though, because of our ethnic diversity, I think many of our cultural issues are

		rooted in the fact that our development as a nation was built upon slavery and importation of different races from across the world. Our real history is not engrained but rather that of the one we were forced to have”.
60	OGiia1	P6: 1:49:00: “We are just about 100% <i>unable</i> to participate in the way this community is run. We have no restrictions in supporting or grouping together for things, but I believe as a society there are things that we will not participate in unanimously due to the polarisation present”.
61	OMiib1	P7:1:52:40: “There is a lot of scepticism about Indians when we talk about communities. For example the community centres and the community groups were seen as a throw by the then government to implant party groups in another guys district. This was particularly after 1970 so there is scepticism about what community centres represent”.
62	OBiib1	P7:1:53:42: “Curepe also has that kind of division like that side of the main road and that side of the main road, it’s almost like old and new and this causes class and race divide. There are more recent migrants into that side [affluent] of Curepe and if you look at the community centre, it will tend to be black.”
63	OAiid1	P7:1:55:07: “The junction really is the hotspot for crime because it has a continuous flow. People are anonymous and it is a magnet for people who you really don’t want to have around there”.
64	OJiva1	P1:1:57:43: “From my understanding communities are not aware at all about what is going on in their area. Everybody have an opinion but I think that most of the opinions are routed in one side or the other. Everyone who has an opinion Is seen to have a political motive; you are either with the government or with the opposition. Everything turns into a political divide and that is the culture of Trinidad. Everything that E-government says the opposition has the complete opposite response, and that is breeding a culture that you’re either with the government or against and there is no in between, no independent thinkers. It blinds people to thinking about where the fundamental issues are”. P5: “Yeah everybody see things with political blinkers on”.
65	-	P3: 2:01:22: “People of middle income tend to shift their allegiance more, they tend to listen more and be more open and conducive to argumentation which is good.”
66	OJiva1	P4: 2:02:00: “The government propaganda is very strong in this country, the newspapers, the radio programmes, the tv, the news, the government always sponsors things and the government has always been in control”. P2: “And the opposition, the opposition also have their own propaganda. What that does is it kills the independent voice. If you bring up an issue which you believe to be a fundamental issue which needs resolved, and if the government doesn’t like it they instantly paint you as being the opposition and vice versa with people being painted as pro government and there is no middle ground here in Trinidad”. P5: “I think this prevents people from speaking up because if you identify a fundamental issue which isn’t supported by the government or the opposition you are automatically tarnished and nothing gets done”.
67	OHia1	P2: 2:03:44: “One of the main issues we have in Trinidad is a lack of accountability and a lack of responsibility. Promises never materialise. This government pledged to bring back the death penalty for high profile criminals, they have been In power for 5 years now and nothing has happened. There is just a lack of accountability by all of the political parties” P3: “It has reached the point now where there are so many issues which have never been resolved that we live in a culture now and this culture has slowly been ingrained in us that nothing at all is gunna happen so nobody bothers anymore”
68		P4: 2:06:12: “one thing which I find problematic for awareness is that people just have no sense of the past and this obstructs our ability to be aware of things. So we had things like the coop and the black power and the colonial period but

	OLia1	<p>there's no sense, there's no historical sense there. No body reacts to these things, everything has happened. Even when the PNM, the last administration is ancient history for us. We have no historic sense of thinking well this is happening now in our country because of what happened or didn't happen in black power, we never know where our problems have arisen from.</p> <p>P1: "This is the worst government we have ever had, and similarly the next government will be the worst government we ever had".</p> <p>P2: "We have absolutely no lessons learned, but next carnival, it'll happen".</p>
69	OLib1	<p>P4: 2:07:50: "We have a saying in Trinidad, 'what is a Trinidadian'. That saying more or less means that we have never experienced anything bad to the point that we are ever prepared for anything bad to happen. It is an ignorant attitude that we have but we are not prepared for anything. It causes pure chaos".</p> <p>"On the 27th July 1990 we had Muslim extremists, the imam Abu Bakr and his team tried to take over the country for a period of 6 days. But the looting, the killings and everything that happened, especially the lootings that took place afterwards; we were never prepared for that. Not one single household in Trinidad could have said that they had everything they needed in their household. Yet we just forget about those incidents. People don't discuss it enough for us to be prepared in going forward."</p>
70	OMic1	P2: 2:12:02: "It's like flooding, every year during the rainy season we experience disastrous flooding in some parts, and
71	OLic2	<p>every year in the dry season we forget about it. It will become a political issue, which party is supposed to fix it, which party didn't put enough funds to fix it. So it's always a blame every year. We forget about these issues, and we forget about the things that cause these problems. I think we have the skills to do it but there is a lack of education to get people to understand the source of the problems and a lack of will in getting the government to do something about it".</p>
72	OHia2	<p>P1: 2:14:25: "There comes a point where the structures we create stop working for you and start working against you... there is a huge lack of planning, there is a lack of design innovation and adaptivity. It just reaches the peak of where it could work and then it just falls apart and that is what we witnessing right now, the falling apart. It is not sustainable at all.</p>
73	OHia1	<p>P1: 2:14:30: "Our communities are not sustainable, people come and go. We have to think about the space we are thinking about and working with to provide services for tertiary education and think about what services we can provide to ensure adequate resources are in place".</p>
74	OMid1	<p>P2: 2:16:20: "When we talk about governance, central governance through to the community, the disconnect that exists is so enormous".</p>
75	OMvia1	<p>P1: 2:16:40: "We talk about crime, security, we have a police service that is a dog without teeth, they get funding every year, but if you live in this community and you want to be secure, you have to do it yourself. You need to put up large walls and barbed wire and you need to have electronic gates and burglar proofing and strong padlocks. These should be delivered by the police as a service to the people. We don't hold them accountable for the services they are supposed to provide to us!"</p>
76	OHiva1	<p>P4: 2:18:00: "When the government do step up to the plate there is a lack of planning and thought going into the regime. They don't think about what end result is needed. The tertiary education system for example. We are proud that people</p>

		can receive free education, but we fail because we don't provide direction to understand the education, when they come out they think they are entitled to something but they don't know what. We produce more people coming out of uni but there are no job prospects. There is no education 'to fill vacancies that exist, especially in older generations'. They may fix things to an extent but never all the way so it is never sustainable".
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Wider context research

Code	Item	Context
0Aia1	British colony	Influence on planning and wider development in Trinidad
0Mja1	Government	How the government operates
0Aic1	"Back in the day"	The history of crime and fear in Trinidad
0Cia1	La Hocketa and Malone	Places in Trinidad which are feared
0Kih1	Bangladesh	Research this place. Crime hotspot in the centre of St Augustine
0Aiii1	Anthony Norman Sabga ransom	Kidnap for ransom, how this changed the nature of the crime and the structure and operations of the Anti-Kidnapping Squad

Mosque Focus Group

Participants:	<p>5 Participants: St Augustine Resident</p> <p>P1: Female- Muslim- Afro Caribbean- Shop owner- 65</p> <p>P2: Female- Muslim- East Indian- Cleaner- 58</p> <p>P3: Female- Muslim- Afro Caribbean- Retired 60</p> <p>P4: Female- Muslim- Afro Caribbean- Full time mum- 32</p> <p>P5: Female- Muslim- East Indian- Mosque volunteer- 69</p>
Date:	Friday 19 th July 2014
Time:	12:30
Location:	St Joseph Mosque, Trinidad

	Code	Aspect	Theme	Category	Feature	Impact
1	0Kic1	0/Negative	K/Agency Involvement	i/Policing	h/Historic Law enforcement	1/Lack of early drug apprehension and law enforcement has allowed it to rise
2	0Jva1	0/Negative	J/Awareness	v/Media	a/Crime stories	1/Media fuels fear of crime
3	0Dib1	0/Negative	D/Demographics	i/Socio economic status	b/Criminogenic classes of society	1/Lower income are violent, upper income fuel drug trade
4	00Iva1	00/Positive	I/Cohesion	v/Population density	a/Schools	1/Small local schools increase eyes on the street and inclusivity
5	00Biia1	00/Positive	B/Design	ii/Layout	a/Cul-de-sacs	1/Cul-de-sacs reduce intruders
6	0Liia1	0/Negative	L/Preparedness	ii/Policing	a/History of child delinquency	1/Child development in 70s and 80s has impacted on the nature of criminals

7	0Mviii1	0/Negative	M/Governance	viii/ Accountability	b/History of government interventions for crime	1/Past governments have been inadequate at tackling crime in this area
8	0Diii2	0/Negative	D/Demographics	iii/ Race	a/Race of convicted criminals	1/Assumed Black African's as majority race for crime
9	0Diva1	0/Negative	D/Demographics	iv/Housing structures	a/Single parent households	1/Children of single parent households assumed to be most criminogenic
10	0Jia1	0/Negative	J/Awareness	ii/Socio economic status	a/Reliance on public transport/vehicle ownership	1/Fear increased in affluent areas due to lack of exposure in public spaces
11	0Fiia1	0/Negative	F/Safety	ii/Policing	a/Criminal conviction rate	1/Free criminals increase vulnerability for wider population
12	0Biii1	0/Negative	B/Design	iii/Sightlines	a/Lighting and visibility	1/Fear of dark unobserved spaces
13	0Mvc1	0/Negative	M/Governance	v/Policing	c/Border patrol	1/Lack of border control allows flow of narcotics and weapons
14	0Avb1	0/Negative	A/Physical Infrastructure	v/Commercial districts	b/Crime hotspots/opportunities	1/Dense commercial activity increases crime opportunities and hotspots
15	0Miii1	0/Negative	M/Governance	iii/Local government services	a/Environmental Management and Maintenance	1/ Pockets along east west corridor become decapitated
16	0Biva1	0/Negative	B/Design	iv/Walkability	a/Pavement quality	1/Lack of pavements and box drains hinder safety and create hiding places
17	0Bivb1	0/Negative	B/Design	iv/Walkability	b/Box drains	1/Box drains are not adequate for flooding and hinder walkability after rain
18	0Mib1	0/Negative	M/Governance	i/Funding	b/Welfare and crime prevention	1/Government initiatives to reduce crime
19	0Miib2	0/Negative	M/Governance	ii/Politics	b/Political scepticism	2/Race as a motivation for political support

20	0Diid1	0/Negative	D/Demographics	ii/Socio economic status	d/Heterogeneity	1/Heterogeneity of economic status pressures lower class to increase wealth
21	0Diie1	0/Negative	D/Demographics	ii/Socio economic status	e/Housing options for low income	1/Criminogenic mixed with non criminogenic due to economic status
22	0Bva1	0/Negative	B/Design	v/Use of public space	a/Open space	1/Lack of open space reduces use of public space
23	0Bvb1	0/Negative	B/Design	v/Use of public space	b/Free outdoor gym facilities	1/Lack of outdoor gym facilities reduces use of public space
24	0Kie2	0/Negative	K/Agency Involvement	i/Policing	e/Police accountability	1/Police ignore petty crimes because of focus on major crimes
25	00Diva1	00/Positive	D/Demographics	iv/Religion	a/Religions of convicted criminals	1/Religion is assumed to control delinquency in early years
26	0Kiib1	0/Negative	K/Agency Involvement	ii/Security	b/Security on building sites	1/Construction workers gain access to neighbouring properties

	Code	Quote
1	0Kic1	P1: 00:55: "Firstly I want to tell you, this place used to be a peaceful place, it was like heaven. And the time, about 50 years ago, it was perfectly different to what it is today. We had none of this modern media and technology. Around 35 years ago what we started happening is drugs. It came in slowly and quietly and people were not aware of what it was. Nobody did anything, nobody cared.
2	0Jva1	P4: 02:50: You hear on the media and you know that this [drugs] is a big issue now, it terrifies everyone.
3	0Dib1	P2: 03:00: Apart from the media you hear and see things now, the behaviour of children and youths. You hear of children in certain areas actually killing shooting beating bullying and carrying guns in schools. In other brackets you have affluent children getting involved in drugs. The ones doing the killing and stealing they are from lower brackets. The ones actually using drugs are the affluent ones who can afford it.
4	00Iva1	P3: 4:18: I am lucky because I live in a nice area and it has been like that for the past 40 years. This is because you feel safe there, there are always people walking down the road and we have a little kindergarten down the road where nice mums come in and walk around.

5	00Biia1	P5: 4:30: It is a locked away residential area, you don't really get strangers coming in and out. It is the layout and it is away from the busy areas. This is the Valsayn.
6	0Liia1	P5: 7:44: These people who commit all the crimes are now like 25-30 and it come about because their generation were not looked after properly as a child.
7	0Mviii1	P2: 7:49: It was the past governments [fault], the options they took to look at crime in these areas.
8	0Diia1	P1: 8:20: There has always been crime in these hotspots and if you look it is basically the African areas.
9	0Diva1	P4: 8:30: They are the people [Black African's} with the mothers who have 5 and 6 husbands; 5 and 6 children to different fathers. As a result you just never know who will mind the children. And if you look at the laws it says they have to mind the child so they have to send out summons for the fathers.
10	0Jia1	P1: 9:32: The problem that these nicer areas have is that they become quite scared. They are fortunate enough to be able to jump in their cars but if they have to walk on the road they just never know.
11	0Fiia1	P5: 9:55: A lot of the crime is not detected so these people are walking on the street, which is what makes us scared.
12	0Biiia1	P3: 10:00: You really have to be careful where you walk so you not in a dark place or somewhere that people cannot see you"
13	0Mvc1	P4: 10:15: The problem we see now which we didn't see before is the boarders; this is where the drugs and the guns come. This is a big problem for the rest of the place.
14	0Avb1	P4: 10:41: Years ago, Curepe is a thickly populated area, many people lived in Curepe and never had a problem. But now in Curepe, every three or four steps you take you finding a bar, you finding a restaurant, you finding food stalls where people accumulate themselves and assemble themselves then people have the privilege of holding people up and robbing them or beating them. And some people they do it really bold attacking people robbing them and shooting them down.
15	0Miia1	P2: 12:07: "This east-west corridor, it goes right from Port of Spain to Mayaro and there are some areas really dilapidated over time which is not looked after or fixed over time and this makes people not want to use it and not look after it even more"
16	0Biva1	P2: 12:20: "We have a lot of schools around here with no pavements, and we have children falling in drains, it is so dangerous. They are also dangerous because people hide in them and can attack you"
17	0Bivb1	P2: 12:30: And this flooding, you see all this flooding in the drains, we have really poor drains, they are not big enough and they are just at the side of the road.
18	0Mib1	P1: 13:29: "This is the best government we have ever had because they are trying to remove crime and they are putting things in place such as the life sport programme. There are boys who have nothing to do and they give them a little stipend and keep them occupied. Also they have vocational schools and places where you can go and better your skills like plumbing and things and training to help you get a job"
19	0Miib2	P3: 14:56: "I am happy with the government, not because It is an Indian government and I am Indian but because they are looking at the issues"

20	0Diid1	P2: 17:30: "Most of the people in this area are people with middle class types of jobs. They will definitely be living according to their means. People of a certain character or denomination will scramble or manage their lives with what they make, some people cannot take that so they will definitely hold you up and rob you to get what other people have"
21	0Diie1	P4: 19:00: "In Malone the government has provided housing. If you not working, you would go into that kind of rental but that is where a lot of the hotspots start from. In fact, it is the people who are not connected with that kind of crime but have to live in those areas who it affects the most. They either turn to crime or become victims".
22	0Bva1	P4: 21:00: "There is very little space for residents in this area to use at their leisure. This really reduces community spirit"
23	0Bvb1	P2: 21:01 "We need more places which are safe, places where we can walk and run"
24	0Kie2	P4: 22:10: "I don't think the design could make it safer for the people who are involved in direct crime activity if they don't control the drugs and guns and weapons and thing and you know this crime mentality have even an impact on people committing little crimes because the police just don't have time for that".
25	00Diva1	P2: 24:20: "I think religion helps keep peoples character in tune, it helps keep you focused and abiding by certain rules and ways of life especially when they are children. No religion teaches bad things".
26	0Kiiib1	P3: 24:45: "Sometimes you see these construction people who eye something up in your house and they will go and rob it"

Student Focus Group

Participants:	<p>P1: Female- Afro Caribbean- 28years</p> <p>P2: Male- East Indian- 30 years</p> <p>P3: Female- East Indian- 26 years</p> <p>P5: Female- Afro Caribbean- 22 years</p> <p>P7: Female- Afro Caribbean (mixed Caucasian)-</p> <p>40- Lecturer</p> <p>P6: Male- Afro Caribbean- 29 years</p>
Date:	Thursday 27 th September 2014
Time:	1.30pm
Location:	UWI, St Augustine Campus

	Code	Aspect	Theme	Category	Feature	Impact
1	00Biiiaa	00/Negative	B/Design	Iii/Sightlines	a/Lighting and visibility	1/Residents fearful of dark unseen places
2	00Bib1	00/Negative	B/Design	i/Maintenance	b/Environmental Maintenance	1/Bushy low greenery creates dark spaces and vulnerable spots
3	00Kia2	00/Negative	K/Agency involvement	i/Policing	a/Police beats	2/UWI campus police only operate within campus boundaries; this causes a false sense of security outside.
4	00Hiii2	00/Negative	H/Sustainability	Iii/Place-making	a/Service provision and heritage	2/Fringes of campus lack social activities to bring together shared interests and build social networks
5	00Iia2	00/Negative	I/Physical Infrastructure	i/Transport	a/Illegal taxis	2/ Increased vulnerability of passengers, and increased opportunities for offenders
6	00Iid2	00/Negative	I/Physical Infrastructure	i/Transport	d/Accessibility of public transport	2/Increases demand for taxi use
7	00Iib2	00/Negative	I/Physical Infrastructure	i/Transport	b/Traffic Flow	2/Density of vehicular traffic reduces safety of pedestrians

8	00Mviii1	00/Negative	M/Governance	Viii/Accountability	c/Regulation of services	1/Installation of advertisement sheds with no regulation causes informal bus stops which are unsafe
9	00Bib2	00/Negative	B/Design	i/Maintenance	b/Environmental maintenance	2/Empty buildings, bushes and dark streets increase vulnerability for students leaving campus
10	00Biva3	00/Negative	B/Design	Iv/Walkability	a/Pavement quality	3/Narrow pavements and roads provide no space for cycling
11	00Bib3	00/Negative	B/Design	i/Maintenance	b/Environmental maintenance	3/ Dirty, unmaintained areas causes pedestrians to detract from public space
12	00Iivb2	00/Negative	I/Physical Infrastructure	Iv/Commercial industries	b/Crime rates/opportunities	2/Crime rates in the area create a negative social stigma of commercial facilities
13	00Bib3	00/Negative	B/Design/	i/Maintenance	b/Environmental maintenance	3/Dirty, unmaintained areas causes pedestrians to detract from public space
14	00Biva3	00/Negative	B/Design	Iv/Walkability	a/Pavement quality	3/Narrow pavements and roads provides no space for walking or cycling
15	00Mviii2	00/Negative	M/Governance	Viii/Accountability	c/Regulation of services	2/No thought put into the functioning of facilities provided
16	00Miii6	00/Negative	M/Governance	Iii/Local government services	a/Environmental Management	6/ Lack of adequate services to maintain environmental functions
17	00Miii6	00/Negative	M/Governance	Iii/Local government services	a/Environmental Management	6/ Lack of adequate services to maintain environmental functions
18	00Jib3	00/Negative	J/Awareness	Ii/Socio economic status	b/Limited demand for cycling/walking	3/ Subsidised gas prices causes an increase in vehicle ownership
19	00Iia4	00/Negative	I/Physical Infrastructure	Ii/Urban Form	a/Historic Planning	4/Buildings are situated too close to roads which restricts flexibility and adaptivity
20	00Cia2	00/Negative	C/Tenure	Ii/Privately rented properties	a/Rental property increase and migration	2/Privately rented properties reduce a sense of ownership and cohesion.
21	00Fib2	00/Negative	F/Safety	i/Planning regulation	b/Regulation of squatter settlements	2/Lack of regulation results in warfare

22	00Kif1	00/Negative	K/Agency Involvement	i/Policing	f/Regulation and control of squatters	1/Squatter residents look for crime opportunities in surrounding areas
23	00Kif2	00/Negative	K/Agency Involvement	i/Policing	f/Regulation and control of squatters	2/Lack of regulation can lead to offensible space
24	00Die1	00/Negative	D/Demographics	i/Socio economic status	e/Housing options for low income	1/Criminogenic mixed with non criminogenic due to economic status
25	00Dva1	00/Negative	D/Demographics	v/Deprivation	a/Proximity of income classifications	1/Close proximity of deprived and wealthy areas increases crime opportunities and fear.
26	00Mviii1	00/Negative	M/Governance	Viii/Accountability	a/Service provision	1/Services provided by government organisations are not delivered
27	00Fia2	00/Negative	F/Safety	i/Planning regulation	a/Adequate security control and regulation	2/Lack of regulation over recreational facilities changes function after dark to criminal hotspot
28	00Jva1	00/Negative	J/Awareness	v/Media	a/Crime Stories	1/Media fuels fear of crime and causes social distrust
29	00Jva1	00/Negative	J/Awareness	v/Media	a/Crime Stories	1/Media fuels fear of crime and causes social distrust
30	00Bia2	00/Negative	B/Design	ii/Layout	a/Cul-De-Sacs	2/ Cul-De-Sacs increase social interaction
31	00Iia1	00/Negative	I/Cohesion	i/Population turnover	a/Length of tenure	1/High population turnover reduces social ties
32	00Liia1	00/Negative	L/Preparedness	iii/Self-policing	a/Patriotism vs. fear	1/Patriotism is overridden by fear which restricts self-policing
33	00Mviid1	00/Negative	M/Governance	Viii/Accountability	d/Over-reliance on government capital	1/Makes citizens lack self-sufficiency and rely on government agencies for control
34	00Mviic2	00/Negative	M/Governance	Viii/Accountability	c/Regulation of services	2/No thought put into the functioning of facilities provided
35	00Mviic2	00/Negative	M/Governance	Viii/Accountability	c/Regulation of services	2/No thought put into the functioning of facilities provided
36	00Hiia2	00/Negative	H/Sustainability	Iii/Place-making	a/Service provision and heritage	2/Fringes of campus lack social activities to bring together shared interests and build social networks

	Code	Quote
1	00Biiiaa	P2: There is not much lighting outside campus or anywhere in fact. I hate this because I always feel vulnerable at night, I sometimes actually miss class because of this; it is just not worth the risk when there are so many bad people on the streets, especially a lone female.
2	00Bib1	P1: I find that the trees are a big problem around here. I mean they look nice but there are so many and they are very low. They create a lot of shadows and you never know who is lurking about.
3	00Kia2	P3: Walking around campus at any time is particularly risky. We have the campus security police but they only operate within the boundary of the university.
4	00Hiia2	P3: And on the fringes of the campus there are no activities, there are no people there at all, no people to watch out for you if you are at risk. We don't want to walk there; it is not a nice place to socialise.
5	00lia2	P1: I find the transportation around here a big problem. Public transport is very unreliable and people just flag down private cars and jumps in. I had a bad experience once when I was sat in the middle of two men. I asked to get out and the driver said, what's your problem, you think we gunna rape you or something? Nothing happened but I felt so vulnerable. That is the extremes we are drove to because of such poor infrastructure and women can be put at serious risk.
6	00lid2	P3: Yeah the maxi timetables are not reliable at all, this is a problem when you have class and you need to get from A to B within a certain time frame, it is often easier to just jump in a car passing by.
7	00lib2	P7: There are so many private cars on the road these days too, the traffic is ridiculous and it battles with pedestrianisation. I don't know how they think they gunna increase pedestrianisation around here, that would be dangerous.
8	00Mviic1	P6: The bus stops are inhospitable. We have PTSP bus stops then we have informal bus stops whereby people have just congregated over time and the bus may stop for them. Sometimes people congregate at these stops and the bus won't stop, companies put advertising there and people think it's a bus stop but there is a lack of regulation and coordination. TCPD probably authorise installation of those advertisement sheds but they don't regulate their use!
9	00Bib2	P6: The grounds at UWI are well maintained within the compound, I think this is ok. But outside there are so many empty lots/buildings and bushes and dark streets.
10	00Biva3	P5: We have nowhere that accommodates bicycles.
11	00Bib3	P1: Curepe area is not maintained. Yes they have bins but if you look at the location of the bins it is cumbersome. You have two bins on the opposite side of Curepe junction and when you pass down on the main road side there are no other bins around the area. Even on the taxi stand side where all the people stand the bins are not usable, there is litter everywhere, this adds to a character, a bad character of the area. Its kinda murky. I wouldn't interact with the environment there; if there's a bench there I wouldn't sit on it. The whole area is dirty.
12	00livb2	P3: There are bars on the Eastern Main Road around Curepe, but I wouldn't go there. It is a very hostile environment.
13	00Bib3	P7: It is all hostile, the sidewalks are not maintained, they have missing manhole covers, they are very narrow and we have dirty drains and a strong stench of urine and sewers. The area we are looking at is a walkable distance but I would never walk.
14	00Biva3	P2: I feel too close to the traffic, you get trapped between the dirty buildings and the garbage and the sewers and the cars. I'd love to walk, but outside of the campus it is just not hospitable, you become destination oriented, you just want to get through there as quick as possible.

15	00Mviii2	P3: There is nothing making you want to stay in the area. This is not just typical to this area though; we have this issue throughout the country. There is no thought put into the experience. They just say here you have a sidewalk to walk but there is no thought put into how the person will experience that walk.
16	00Miiia6	P2: There are no facilities for bicycles either. And given the traffic situation I think it would be a very attractive feature to be able to cycle or walk to work. Nobody would dare try this though because it is unsafe.
17	00Miiia6	P2: I think our culture is very scornful of sweat, if we know somebody rode their bike to work, we would stay away from them. But there are also basic elements missing. Where do I put my bike when I get to my destination, there aren't even street signs that I can chain my bike to. Also, the culture here, somebody is gunna come along and be like whose bike is this. People would either steal it or they would just mess about with it because they aren't used to seeing bikes on the street. It needs to be a collective effort; we need more biking facilities in everything we do. This country is not made for people on foot or on bikes.
18	00Jiib3	P7: But at the same time we don't have a demand for biking. Gas prices are so low nobody needs to ride a bike. If there was more of a demand for it, then planners would have no option but to integrate bike lanes and bike racks into the urban landscape. I think our time is coming for a biking revolution. At the minute though, if we were to install bike racks and bike lanes, where would we fit this on our little 3ft wide sidewalk?!
19	00Iia4	P5: The current design we have and the lanes we have are so limited. There is no room for expansion because the buildings are so close to the road. Even if we did put lanes in, we can't be riding on them because you would get knocked down.
20	00Ciia2	P6: I think an issue we have is that a lot of people can't afford to buy their own home. And when they don't own their own property they lack a sense of home and a sense of ownership. This is because they are limited to what they can do to a rental property. I think it frustrates people to be paying money every month but legally it's not yours.
21	00Fib2	P5: With regards to squatters, this is an illegal action and they are breaking the law. The level of crime is higher in these communities, rape, incest, small robberies, and sometimes murder. One of the issues that persist in most squatting communities is the lack of infrastructure. People don't know each other and often it can lead to warfare because people see a spot and they take it, but then someone else come along and say I want this spot and they will fight for it. And because there is a lack of regulation and no planning, people fight for their boundaries. Drugs are also a prominent factor in squatter settlements.
22	00Kif1	P6: There are at least 3 or 4 squatter settlements around here and I think it puts the wider public at risk. Squatters have a sense of entitlement and because their lives are built around taking what they want, they are often prolific offenders of burglary and theft in the wider areas.
23	00Kif2	P7: Another issue with squatters is that over time families will grow they tend to flock together in to particular spaces. So a whole family might have 3 or 4 houses in this one yard and they become very territorial. I think territoriality at this level is a bad thing though, because of their lifestyle they are constantly on edge.
24	00Die1	P6: I don't think we have a middle class any more, it is upper and lower class. I don't see the government doing anything except the HDC who is ripe with corruption. I think the problem with this is that people can no longer acquire a house in the area that they want to settle, people are forced to rent and the rental prices are still so high you may be forced to live in a neighbourhood that you feel fearful. People will come and say people are vandalising their homes because it is a low

		income area, people just come in and steal your stuff. And the thing is with this, when there are people moving in, these areas get targeted by the criminals.
25	00Dva1	P5: The thing is here there is no thought put into the proximity of settlements. If you have a private development, you are most likely gunna find low income developments nearby where they are more apt to criminal behaviour and they look to come to these areas to do their activities.
26	00Mviii1	P7: I've seen the government advertise a campaign to light up the savannahs and the parks but they haven't done this. There's a park at the back of the teacher training college at Curepe but I can't think of any other parks.
27	00Fib2	P6: In terms of recreation grounds we have a park on the edge of st Augustine and Tunapuna but this is known for congregations of socially displaced persons and deportees.
28	00Jva1	P4: I think there is a lot of suspicion amongst communities these days. People are so fearful of each other because they just know through the media everybody out for themselves. If I say hi to someone in my street they look at me as if to say why is she talking to me, why is she being nice, what does she want? People always think you have an alteria motive for being so friendly towards others just by nature.
29	00Jva1	P2: I think our generation has been brought up that way, when crime started rising significantly we were told not to talk to strangers and I think today that has had a knock on effect by causing a contradiction. Basic civility and manners are often confused as well because of the relationship between men and women in society. Women are afraid to say hello in case they come across as inviting.
30	00Bia2	P1: I think inclusivity has a lot to do with physical infrastructure too. Many of our communities are structured in a way that we don't need to pass our neighbours. There are a number of ways in and a number of ways out. But in more informal communities there is often only one entrance and exit point so you are more likely to know each other or at least recognise each other and know each other's personal affairs to a certain extent. In more formal communities however people lead much more insular lives. They don't interact as much.
31	00lia1	P1: I think in an area where there is a particularly high rate of rental properties, people are very transient and you don't have a vested interest in your property and neither does your neighbour. You don't therefore spend considerable time getting to know your neighbours because chances are either you or they will be moving soon. People are a lot more transient now.
32	00Liia1	P2: Our level of patriotism is not very high. The love of our country. Yes we like it from a PR perspective; foreigners looking in and we saying oh this is a lovely place. But some of the real deep issues effecting the country, people driving on the shoulders, people littering, it is not coming as a citizen to tell that person they are wrong and make that stance. There is a fear of this and we tend to let people just do what they want; our sense of patriotism is not that high where we have a deep passion for the wellbeing of our country. So I guess we do have a level of fear of being attacked when we take that stance and I think that has a lot to do with patriotism.
33	00Mviid1	P3: I think whilst the country has money, we just expect the government to do everything. Everything is politically motivated. Come election time, the government dangle things to us and we jump through hoops to do it. But generally we do not self-govern, we just complain to the government and if it's close to the elections, you may get a response, if not you just burn some tyres or something. We are not self-sufficient because we have never needed to be but at the same time the government does not take sustainable approaches.

34	00Mviic2	P4: The thing is if we have a walking area between the campuses across the education city, who is gunna maintain it. This area is so stigmatised; we would need to have some kind of access control or toll to ensure that people want to actually maintain the area that they are paying to use.
35	00Mviic2	P4: I think as well people don't use public spaces for enjoyment, but we are looking for these safe open areas more and more. But there are complaints of single others meeting each other for companionship in public spaces so why not create an environment to socialise. So having more activities along the routes so you are not just walking from A to B, we need features or promenades or something to facilitate the use of space as recreational rather than destination oriented. I think programming is just as important as actual design.
36	00Hiiia2	P3: We do have so many talented individuals not just musical but artistic and so on, and we need to make use of these and promote them in things which are as simple as just using public space. We lack these features hugely in this area despite the situation of the university.

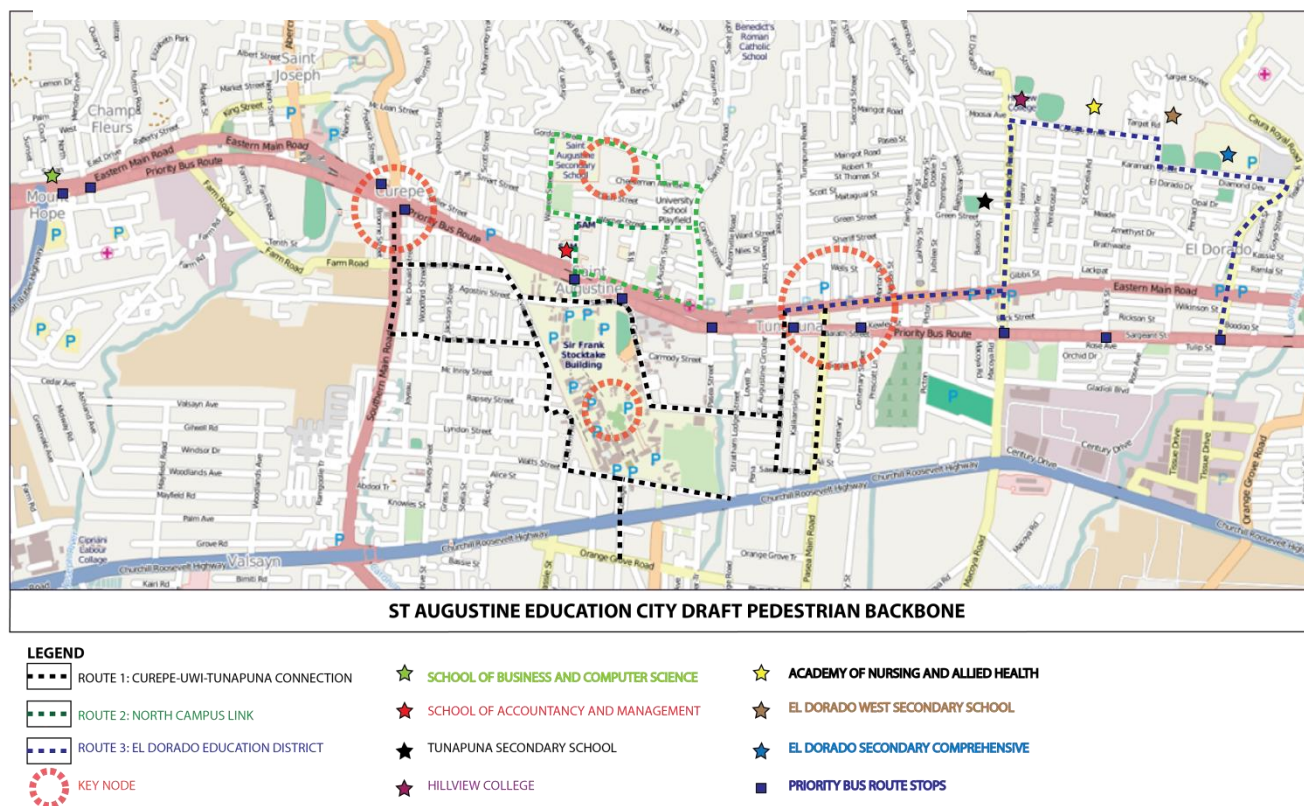
Appendix I

Synthesis of context information for TCPD, OpenPlan and DOCG.

This information was provided to professionals to explore the impact it had on their ability to understand and apply the CPTED principles. The focus was not to measure crime risk as part of the thesis but merely to provide social context to professionals.

The following section provides a synthesis of context information provided to the three professional organisations which took part in focus groups (TCPD, OpenPlan and DOCG). This information illustrates the case study area as demonstrated in Plate A1. The data obtained from chapter eleven is then discussed in relation to the CPTED principles to illustrate how the indicators of social sustainability have successfully provided context knowledge on crime, fear and quality of life in the study area.

Plate A1: TCPD Proposed pedestrian backbone map



Reference to ‘Route 1’, ‘Route 2’ and ‘Route 3’ can be found throughout the findings section for each CPTED component discussed below.

1.1 Surveillance

1.1.1 Formal Surveillance

Table A1 sets out data collected for the analysis of formal surveillance in the St Augustine Education City.

Data	Method	Uncertainty	Source Reliability
Security in commercial premises	Observation	1	A
Security in residential premises	Observation	1	A

Findings:

Formal Surveillance in Trinidad is varied and often unregulated. Control mechanisms generally range between CCTV, armed security and guard dogs. The extent of formal surveillance is higher than average due to the heightened crime risk the country faces. Observations have indicated that private security guards are present in a number of public areas and activity nodes such as supermarkets, banks, large shopping malls etc. and particularly in affluent areas. Observations of the study area revealed that no licensed premises have security to mediate conflicts which is particularly problematic given the proximity to residential dwellings. The presence of formal surveillance mechanisms is significantly higher in more affluent residential areas of northern St Augustine. Whilst this may create a sense of safety amongst residents, there is a significant decrease in pedestrians on the street in residential areas due to fortification and fear of the public realm.

1.1.2 Informal

Table A2 sets out data collected for the analysis of informal surveillance in the St Augustine Education City

Data	Method	Uncertainty	Source Reliability
Design and physical conditions of the environment (e.g. wall height, security measures, dead spaces, vacant plots of land)	Observation	1	A
Crime locations	Secondary data from TTPS	2	B
Open green spaces	Observation/map analysis	1	A
Vacant spaces	Observation/map analysis	1	A
Box drains	Observation	1	A
Lighting	Observation	1	A
Informal relationships	Observation	1	A
Migration and population turnover	Secondary data from census	1	A

Border surveillance	Map analysis/ Police interview	2	B
Police patrol	Observation	3	C
UWI campus security	Interview with campus security	2	A
Design and physical condition of commercial premises	Observation	1	A
Management and maintenance of recreational facilities	Observation	1	B

Findings:

Design and physical condition of the environment

Observations of residential and commercial areas in the St Augustine Education city identified an overemphasis of security measures such as iron bars and shutters on windows and high walls. Designs such as these significantly reduce surveillance opportunities by blocking two way sightlines between the building and the public realm. Analysis of crime data between 2001-2013 revealed that residential dwellings were the most common crime site for murder (27%) indicating further consideration of the crime opportunity in this context is needed.

Surveillance opportunities differ north and south of St Augustine due to variations in design, boundary height and transparency. North St Augustine is more fortified with high walls and private security mechanisms. South St Augustine/Curepe (illustrated in Route 1 of Plate A1) have limited land space which restricts wall height exceeding a certain level due to the proximity of windows to the dwelling boundary, however this is often replaced by excessive security measures such as bars and shutters as previously mentioned. Fortification is extremely prevalent in this area which also has significant impacts on fear and perception of crime in the public realm.

Limited plot sizes in lower income communities often create small alley ways and tunnels between properties; lighting is also poor which creates dark spaces. Some properties have flood defences by elevating buildings above ground level creating space for concealment from public view. These features pose significant risk to people coming in and out of the property and allow for organised and opportunistic crime to occur due to the lack of surveillance.

There are a substantial number of areas around the study area which pose risk to local communities, especially students when trying to increase pedestrianisation between campuses. Vacant land, vacant buildings and structures, dark unused streets and some large drains and sewers act as dead spaces since they are often overgrown and unmaintained with very poor surveillance or management. Hiding places are accessible and out of sight from the public realm so providing



opportunity for criminal activities. Analysis of crime data between 2001-2013 revealed that unmaintained areas such as forests, bushy areas, vacant houses/land, river banks etc. featured the 2nd highest site for murder (22%) confirming that these spaces pose a significant risk to public safety.

Recreational facilities

Observations identified some recreational facilities for public use. The tennis courts on McCarthy Street have good connectivity however natural surveillance is limited due to high walls blocking sightlines from the public realm. Lack of maintenance creates hiding places for offenders and the lighting around the site is poor creating dark spaces with little surveillance. Sporting fields at UWI campus are very well maintained with bins and seating areas and good natural surveillance from

surrounding buildings and roads. The area has a transparent



boundary allowing good surveillance inside and outside the site. This is beneficial for the pedestrian route around the campus since the mixed use of the area increases surveillance onto the public realm. What is problematic here

is the Centre for Language and Learning building which is

located inside the UWI boundary in close proximity to the sports field. The building has no windows overlooking the pedestrian route and poor lighting after dark increases the vulnerability of this space.

Vacant spaces

Observation of Route 3: El Dorado Education District identified recreational facilities along College Road. This route is potentially vulnerable since parts of college road are almost derelict with little human activity and there is a large ditch running along the length of the road offering hiding places for opportunistic offenders. There is a lot of vacant space here which has not been maximised to support activities of pedestrianisation by increasing public use of space and eyes on the street.

Box Drains

Box drains are particularly dangerous for pedestrians and cars and increase concealment opportunities, especially outside residential boundaries. The average size of box drains is around 1.5 metres wide and 1.0 metre deep.

Analysis of crime statistics between 2001-2013 indicates that sidewalks and streets feature the 3rd highest crime site for murder (11%).



Informal relationships

Enjoyment of public space is essential for effective natural surveillance. It helps build informal relationships and foster a sense of community which helps develop social norms and identify potential intruders and anti-social behaviour. The 2007 Victim Survey (See Holder 2008) revealed that only 49% of respondents agreed they live in a close knit community and only 44% of respondents said their area had social cohesion. Respondents indicated only 42% of residents agreed they would intervene against youth loitering, 46% disagreed; and 52% said they would intervene in street violence but 34% wouldn't. 55% of residents agreed that they would be willing to help their

neighbour and 28% disagreed. Areas with high social control were calculated at 34%, medium at 37% and low at 23%.

Migration and population turnover

Migration and population turnover is also considered to impact on the ability to build informal relationships and therefore engage in collective natural surveillance and territorial behaviour. IN migration from Tunapuna/Piarco is above average at 13.3% and OUT migration below average at 11.2%. High population turnover between regional corporations may impact on resident's ability to build social networks and engage in natural surveillance.

Lighting

Poor lighting creates dark spaces in the built environment and reduces opportunities for criminal apprehension. Fear of crime is also increased since it is difficult to identify objects and there is an awareness of potential hiding places.

Good lighting systems are designed to distribute an appropriate amount of light evenly using lamps with a colour rendering index of at least 60 (ACPO SBD 2011).

Currently there are no lighting standards in Trinidad which make it vulnerable to crime and public safety. According to the Trinidad and Tobago Electric Commission (T&TEC) who are the main power suppliers for the country, Trinidad largely consists of High Pressured Sodium Lamps which have an average illuminance level of approximately 5-10 lux. For colour rendering qualities, High Pressure Sodium

Lamps also have a poor colour rendering index which means it is difficult to identify certain features or objects and colours often appear distorted. For effective CCTV and facial recognition, lighting conditions should be no lower than 15 lux (ACPO SBD 2011); therefore CCTV is unlikely to be effective.

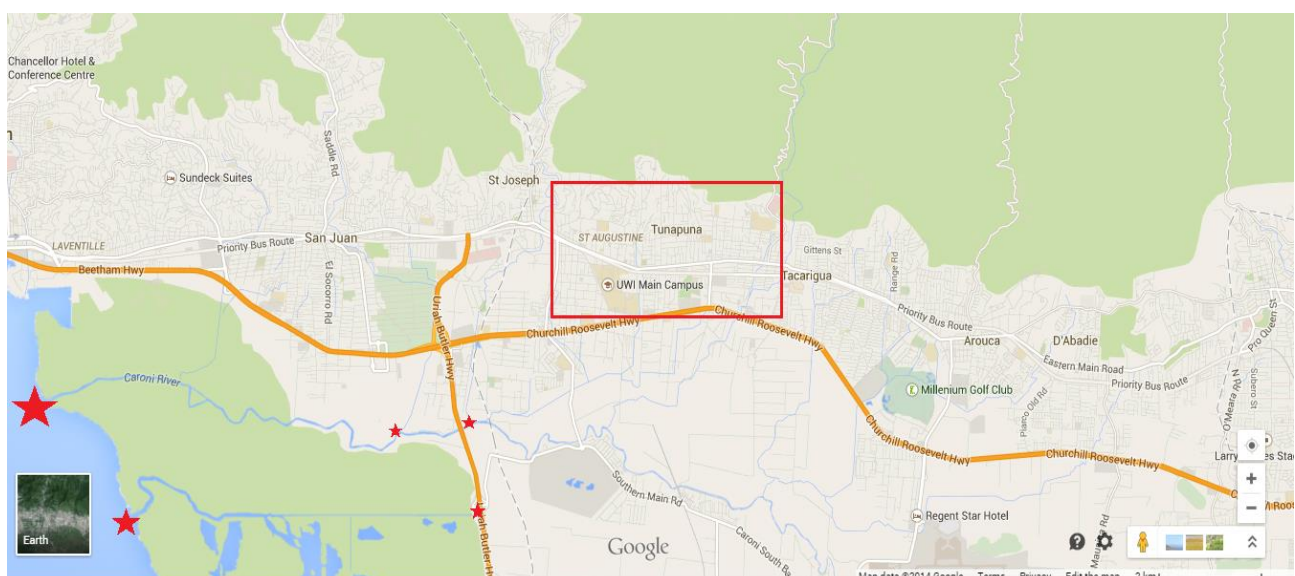


The average distance between lamps in the study area is approximately 60 metres/196ft which creates dark spots in between lamps making it impossible to see objects during hours of darkness. A number of street lamps are also broken and unfixed, creating even bigger dark spaces between lamps. Such a great distance between lamps often makes objects unseen or unrecognisable. Lighting levels around UWI campus are significantly higher quality as a result of private installation. Route 1 of the proposed pedestrian backbone has a large proportion of higher quality lighting, however this may create a false sense of security for pedestrians leaving the light zone and entering zones with poorer visibility.

Border Control

A risk concerning the surveillance of Trinidad's borders has been identified due to issues of drug trafficking through major rivers and the country's close proximity to Central and South America. The Caroni River was identified in an interview with police as the transatlantic shipping point for narcotics and weapons to the Western World. These rivers are currently not policed since the marine branch was disbanded in the 1980s by Government. The study area is considered a potentially vulnerable area to activities associated with drug and weapon trafficking. Police have confirmed (see Appendix F) that criminal activity does exist in large rivers and the offenders are likely to travel along the major highways once on land.

Plate A2 illustrates the Caroni River and its proximity to major highways running north and east through the study area.



Police Patrol

Residents indicate that police patrol of squatter settlements is poor and neighbouring settlements are at risk of victimisation due to significant variations in socio economic status. Eight separate observations in both squatter and affluent communities identified 4 police cars, none of which were within squatter areas and three of which were private security vehicles. Low income communities will likely have lower confidence in the police service, a reduced likelihood of reporting crime and greater opportunities to offend due to limited regulation. Analysis of the 2007 victim survey indicated:

35% of respondents had negative perceptions of the police.

More respondents thought police were poor at preventing crime than good at 45% and 41% respectively.

56% of respondents disagreed that police respond promptly to calls compared with just 25% that agreed.

37% of respondents disagreed that police were helpful to victims of crime, compared to just 32% who agreed.

When asked if police work well with residents, 49% disagreed and just 26% agreed (Holder 2008)

These figures indicate that the police-community relationship is extremely poor which significantly reduces the likelihood that residents will act as capable guardians without additional measures to increase engagement and attachment to the local environment.

UWI Campus Security

UWI campus security provides an escort service between 6pm and 6am for students leaving the campus after dark. There is a student shuttle service between campus buildings between 7am-10pm and 24 hour patrolled walkways within the campus boundary. There is an emergency blue phone service situated at 14 locations on campus and an abundance of safety advice available online.

1.2 Positive Reinforcement of Legitimate Behaviour

1.2.1 Image Management/Maintenance

Table A3 sets out data collected for the analysis of Image management and maintenance in the St Augustine Education City.

Data	Method	Uncertainty	Source Reliability
Physical conditions of EMR	Observation	1	A
Pavement materials and conditions	Observation	1	A
Management and maintenance of recreational facilities	Observation	1	A
Abandoned buildings	Observation	1	A
Physical condition of residential zones	Observation	1	B

Findings:

Physical conditions of residential zones and EMR

Observations across the study area revealed a number of negative features which all have damaging effects on the perception and use of public space. Many roads, particularly commercial zones along the EMR and around Curepe Junction are extremely congested and inadequate for safe pedestrianisation.

There are a number of sites where rubbish has been dumped at the side of the road and on pavements with no effective management or removal processes in place, this negatively impacts street activity and pedestrians are forced to walk on the road.

Beyond the rubbish, streets are generally dirty and unmaintained, with open sewers and drains and dirty buildings and pavements. There are also a number of street dwellers sleeping in shop doorways

on very narrow pavements. This image portrays an environment which has no sense of ownership, no law and order and a place which is in economic and social decline.

In a large proportion of the study area buildings are in a state of disrepair; many have been burned down without reconstruction or demolition, dwelling boundaries are dilapidated, windows are broken and shop frontages are dirty and unattractive with no regulation over material quality or building standards.

Developments are frequently abandoned during construction due to financial or legal implications which results in a number of overgrown sites and discarded building materials. The impact of poor maintenance creates the perception that unlawful and anti-social behaviour is tolerated and that there is a lack of ownership in the area. These perceptions often allow crime to escalate, causing further degenerative effects in the community.



Image management and maintenance of northern residential zones have a good variation and consistency of building designs, colours, surfaces and textures which are aesthetically pleasing, signalling a sense of ownership, care and preservation.

This sustains positive social norms and community control due to the perception of a strong sense of ownership in which unlawful behaviour is not tolerated. Some properties offer well maintained



exteriors which extend out into public space and transparent boundaries which provide good natural surveillance and positive social stigma.

Power lines have a big impact on the aesthetic quality of the environment and in some places can be quite obstructing to both sight

and accessibility. Power lines are aesthetically displeasing and have a negative impact on the streetscape and perception of an area. The positioning of the power lines can obstruct sightlines from buildings and generally suggest a lack of maintenance and management.

Abandoned buildings

There is a high number of abandoned buildings and plots of land in the study area, having a range of negative effects on crime and ASB. These buildings lack a sense of ownership which is vital to enforcing a standard of behaviour which is both lawful and accepted by the wider public realm. Lack of ownership allows easy access since offenders know there will be no control mechanisms in place (social, physical or technological), to restrict easy access. These spaces are often hotbeds for illegal activities and with limited visibility from public space due to lack of maintenance and lighting, the space becomes vulnerable to drug dealing, ASB and potentially violent opportunistic and organised crimes. This can have negative impact on the signal the area portrays to people passing through and can have a negative impact on the wider street scape which otherwise may be well maintained and controlled; pedestrians are also at risk when in close proximity to these sites.

Road and pavement conditions

The conditions of the roads and pavements impact on the safety and level of pedestrianisation. Pavement materials are primarily concrete which cause problems for maintenance. Due to the weather conditions and materials which do not allow expansion in high temperatures, pavements are cracked and uneven; many have deep holes and crevices making it dangerous for pedestrians and vehicles, especially during hours of darkness. The pavements are also dirty and littered. This causes pedestrians to walk on the road and negatively impacts the image of an area perceiving social decline and lack of ownership due to poor maintenance and minimal investment.



Maintenance of recreational facilities

Some recreational facilities are poorly maintained which is highlighted as a fear generator by communities. Facilities which are unmaintained increase their perception of vulnerability due to a lack of management and security. The campus sports field bordering Warner and Warren Street is in a

good location with good connectivity and walkability from the school and surrounding residential areas however this is closed to the public and therefore its use is limited to specific times and days.

The boundary of the facilities is transparent which signals a positive image when the field is in use and also fosters a sense of community by coming together for a common purpose. The facility is however restricted by razor wire fencing to limit access; this makes the environment aesthetically displeasing and signals that the space is limited to private hire, therefore creating an unused site out of hours. More open access and management of this space could enhance the use of the area by the public if more formal security or management procedures were in place. Lighting around the area is also inadequate, specifically around the back of the pavilion which has become derelict and unmaintained showing signs of corrosion, vandalism and general disrepair. This creates a sense of abandonment and lack of social control, in turn signalling a sense that anti-social behaviour and vandalism is tolerated in the area.

Many facilities for children in this area including schools and parks are poorly maintained and have poor access and egress control. The children's play area bordering the PBR and Evans Street lacks maintenance. The park is surrounded by a number of low trees and grassed areas which rarely maintained. This makes it vulnerable for users especially at night. The park is visually attractive but use may be limited or more vulnerable due to its juxtaposition to a busy arterial road and poor access. The park also lacks natural surveillance since it is hidden from direct public view with no buildings or public spaces overlooking the area.

Activity Support

Table A4 sets out data collected for the analysis of activity support in the St Augustine Education City.

Table A4: activity support data

Data	Method	Uncertainty	Source Reliability

Pavement quality	Observation	1	A
Road layout	Observation	1	A
Average speed of cars	Observation	2	A
Vehicle counts	Observation	1	A
Pedestrian use of pavements	Observation	2	A
Public transport	Observation	2	A
Parking facilities	Observation	1	A
Cars parked at the side of the road	Observation	1	A
Sightlines at junctions	Observation	1	A
Open green space	Observation	1	A
Historic landmarks and architecture	Observation	1	A

Findings:

Activity support concerns the places where human activity is appropriate to the location, to reduce the risk of crime and increase safety at all times. This is dependent on a number of factors which can affect human activity in an area. Design of the built and natural environment needs to complement and support the social environment so conflict is reduced and the intended function of the environment sustains.

Research in the St Augustine Education City highlighted a number of risks to activity support which subsequently has impacted and could impact the function of the environment and the behaviour of its users.

Pavement quality and pedestrian use

With a primary focus on pedestrianisation in this area, the issue of pavements and walkability has already been highlighted as a negative feature. The average width of pavements is around 91 inches which is inadequate to accommodate dense pedestrian flow during daytime hours. The pavement

height is also restricting in some areas, especially for the elderly or the infirm. These features make the activity of walking difficult and may result in people using vehicles for short journeys.



The study area is primarily a university district but also contains dense commercial and residential activity making it a prime hotspot for pedestrian movement. Due to historic development and urban form, the width between buildings in some areas is unsuitable to accommodate traffic flow *and* pedestrians, and

pavements appear to have been added as an after-thought. This makes it difficult to exert ownership over public space; it increases the risk of pedestrian-vehicle conflict which has been highlighted by communities as a risk from both a health and safety perspective and from a victimisation perspective since pedestrians are fearful of attack by drivers and vice versa.



There are also a number of streets which have no pavements, forcing pedestrians to walk on the road conflicting with vehicular traffic. Residents will begin to detract from public space due to fear, stress or a lack of enjoyment and will resort to travelling via vehicles, outside of town to bigger shopping malls where pedestrian safety has been considered more.

Both paved and unpaved streets were analysed, highlighting a noticeable difference in the numbers of pedestrians (89% on paved streets and 11% on unpaved streets). This indicates that streets with no pavements do not support pedestrianisation. CPTED is dependent on effective natural surveillance and capable guardianship; limited pedestrian activity is reduced in these areas making residential properties vulnerable and increasing the vulnerability of pedestrians walking in secluded streets.

Road layout

The road networks in the study area are often grid systems and in parallel with one another yet all

roads have vehicle access. This limits space available for pedestrian routes to be improved and expanded. Pedestrians have specified the desire for cycle lanes adjacent to pavements and for recreational nodes as points of interest throughout pedestrian routes, yet the current width of roads struggles to accommodate vehicular traffic flow and therefore limits pedestrian and cyclist space.

The average width of roads in the study area are around 6 metres wide; but this is considered inadequate for sustainable function of vehicular traffic, particularly in busy areas. Vehicles have priority access on all roads, and where pavements do exist, buildings are often so close to the road side that pedestrians are barricaded between buildings and dense traffic flow due to the limited width of pavements. There are no spaces with priority for pedestrians or no use of materials or objects to divide vehicle and pedestrian space.

Vehicle counts

Observation of vehicle density was measured in intervals to reflect variations in peak and off-peak times. The average number of vehicles per hour on the EMR was calculated at 1454 with an average of 26172 vehicles per day (based on an 18 hour day of frequent human activity). This referred to any vehicle, including taxis and busses. Although this is a main arterial road, it is multi-functional and densely populated. The number of vehicles passing through the area puts pedestrians at significant risk if not properly managed. Drivers are also at risk due to the density of vehicles causing traffic congestion and lack of activity support and access control allowing conflict of space amongst vehicles and pedestrians.

Sightlines at junctions

The proximity of buildings and property boundaries to the road side obstructs sightlines at corners and junctions or pavements/box drains create very sharp corners. This is a major problem for road safety and the safety of pedestrians since vehicles are forced to drive out on blind corners or they become grid locked with vehicles facing the opposite direction that have



been forced to drive on the wrong side of the road to avoid the sharp bend. Instances such as these often end up in disputes or car crashes in which pedestrians can be involved.

Vehicle speed

Observations calculated traffic congestion in the study area. Whilst car speed is varied during different times of the day and days of the week, an average speed was measured at 20-25 kmph during off peak hours and 7-15 kmph during peak hours. There are often many intervals of static traffic and obstructions from pedestrians and other vehicles due to the lack of regulation and suitable infrastructure. There is no use of design, materials or instruments to define boundaries between pedestrian zones and vehicle zones. There are frequent crowds of pedestrians walking out into the road and through the traffic and vehicles driving and parking on pavements. This has a significant impact on traffic flow; integrating the space used by pedestrians and vehicles increases the risk of victimisation to both.

Parking facilities

Measurement of vehicle parking calculated 55% of commercial premises in the study area had no parking facilities, 91% of which had cars parked outside the building on the main road obstructing traffic flow. 45% of premises contained parking facilities of between 2-7 spaces depending on the building size. Whilst this is an advantage, the positioning of parking facilities on front terraces means that parked vehicles are forced to reverse out onto busy arterial roads, creating yet another obstruction to traffic flow. Cars parked at the side of the road are an important observation to highlight the extent of the issue and the subsequent implications this has on the intended function of the environment.



There is a significant lack of regulation and enforcement for vehicles parked in obstructing places and no definitive boundary between vehicle, pedestrian and cycle routes. In order to reduce bias and uncertainty in the data collection process, 16 streets were picked based on their land use, in reference

to a land use map produced by TCPD. The observation selected an equal number of streets per land use category both during day and night time hours. Day time figures showed out of 16 streets, there were a total of 380 cars parked with an average of 24 cars per street. During night time hours, a total of 346 cars were observed, with an average of 22 cars per street. No noticeable difference was observed during daytime and night time hours suggesting that the problem persists regardless of the time of day and is likely a result of the mixed use of commercial and residential properties in the area. What was noticed however is the considerable difference in numbers north and south of the Eastern Main Road. South of the Eastern Main Road featured 68% of the parked vehicles. North of the Eastern Main Road only featured 32%, this indicates that the residential areas north of the EMR have more adequate parking facilities and less traffic congestion. Residential areas south of the EMR are also in close proximity to the Highway and the University which will likely impact on the density of traffic.

Public transport

The Ministry of Works and Transport recognise the inadequacies of transportation services provided by the transport service corporation, especially in rural communities. They identify that *'many citizens rely heavily on PH taxis to travel during late hours when other conventional modes of transport are not available'*. It adds that *'citizens are fearful due to the crime situation and the ministry notes concern over the number of people having serious criminal convictions operating the PH service which puts citizens at risk especially in remote villages of the country and late at night'* (Ministry of Works and Transport 2014). A regulatory framework is being drafted to prevent unregulated PH services and ensure legitimate means of transport are available to the community. Maxi taxis are considered to be unreliable due to the lack of scheduled timetables and at times dangerous to the public. In an observation of 8 individual time intervals, maxi taxis passed through the area frequently on week days although the numbers of seats in these vehicles is restricted to 12 persons in this area. It was noticed that maxi taxis were infrequent after 5pm, especially at weekends which increases the risk of victimisation amongst students who are likely to travel to POS for the night time economy with little means of transportation besides flagging down vehicles or drink driving. Unregulated public transport services are considered to be a potential barrier to effective crime reduction however if the

design of the immediate surrounding environment is improved, the risk when waiting public transport is likely to reduce.

Historic landmarks

Observations carried out in the study area identified very few features which positively enhance the experience of humans using these spaces. There are no activity generators such as benches, gardens, monuments, public parks, pedestrian only streets containing cafes, restaurants and shops, water features or outdoor arts and culture which encourage an enjoyable pedestrian experience. The area currently functions as a hostile place which people use to get from point A to B.

Residents of St Augustine indicate that a lack of cultural heritage and patriotism in Trinidad impacts on place making and a sense of community. Trinidad has a number of historic landmarks which preserve the colonial heritage and history and development of the island most of which are situated in Port of Spain. Their prominence however is not effective since many remain abandoned and in need of renovation. Areas lacking in cultural heritage and preservation were believed by communities to limit the capacity for patriotic attitudes which help foster a sense of national pride and ownership. Only then can residents collectively engage in a common interest or purpose.

1.3 Access Control

Boundary Definition

Table A5 sets out data collected for the analysis of boundary definition in the St Augustine Education City.

Data	Method	Uncertainty	Source Reliability
Urban Form	Observation/map analysis	1	A
Permeability	Observation/map analysis	1	A
Physical conditions of residential zones	Observation	1	A

Physical condition of commercial premises	Observation	1	A
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Findings:

Urban Form/Permeability

Urban form is difficult to control in Trinidad due to the nature of planning and development.

Properties are often built individually rather than forming part of a larger development which reduces the ability to control the streetscape and regulate characteristics of dwellings in residential areas. As previously mentioned, the study area has mixed land use which is good since activities tend to function on a 24-hour basis. The commercial core however is problematic which has implications on surrounding residential areas. The risk with regards to offender pathways into and through the commercial district have already been mentioned, however the residential layout of surrounding areas also increases vulnerability. Crime pattern theory suggests residential burglary increases the closer a residence is to commercial properties (Brantingham and Brantingham 1982) since non-residential land use increases offender pathways, increasing opportunities for crime, increasing anonymity and decreasing control.

A large proportion of the study area is a grid system layout which provides easy access and escape routes for criminals, therefore increasing the vulnerability of both properties and people. Access and egress around northern parts of St Augustine are more secure due to the cul-de-sac style design.

People entering and exiting these private areas are more likely to be noticed.

Grid systems are a common layout for residential neighbourhoods in Trinidad. There is a risk that this design may be criminogenic due to easy access and egress opportunities which reduce the efforts and risks to potential offenders. These types of neighbourhoods are also more permeable, which means people are more likely to pass through the area on route between two locations (offender pathways); intruders or potential offenders are therefore less noticeable.

Residential layout in northern St Augustine is slightly different. Whilst it is still a grid system, albeit less linear, many roads are dead ends and some are cul-de-sac designs which are highly secure since through traffic is restricted and people entering that space are generally noticed and observed.

A balance is needed here to encourage an urban form which does not *restrict* access, but *controls* access. Restricting access by making *all* roads dead ends or cul-de-sacs will reduce pedestrianisation and capable guardianship to a certain extent; therefore, natural surveillance mechanisms will be limited. The current system however is extremely permeable, allowing free movement of pedestrians *and* cars with no control and regulation which has a larger impact on the opportunities for offending and the ability to identify offenders.

Conditions of residential zones

Dwelling boundaries in Trinidad are very prominent as previously mentioned due to high walls and gated entrances. Whilst this strongly defines private space, it also has potential to create a fortress mentality in that owners and residents will guard their property within its boundaries; but outside the boundary, ownership of public space is not asserted. These spaces signal that legitimate behavioural norms do not apply which generally leads to higher risk of crime and anti-social behaviour due to the lack of “semi-public space”.



Conditions of commercial zones

Boundaries of commercial premises are typically defined by frontages for parking. Whilst this offers good delineation between public and private space, defined pedestrian access is limited causing conflict of space as previously mentioned. Some shops without parking have no definitive boundary and the shop entrance and exit opens out onto the street. This increases crime risk since the shop entrance lacks ownership and opportunity for crime is increased via quick access and egress. Whilst it is still strongly argued that the whole study area lacks innovative parking access in a densely populated area, El Dorado does provide a better example in some properties where parking is located

in the front of buildings without restricting pedestrian access. The boundary of the property is surrounded by small walls and parking spaces are defined so not to restrict access to the building.

Target Hardening

Table A6 sets out data collected for the analysis of target hardening the St Augustine Education City.

Data	Method	Uncertainty	Source Reliability
Design of security measures	Observation	1	A
Development control	Policy analysis	1	A
Security standards	Policy analysis	1	A

Development control and Security Standards

Target hardening is wide ranging and varied in Trinidad, and difficult to control. Currently there are no government standards in place for regulating physical security measures and crime prevention is not directly considered or enforced in the built environment. According to the TCPD guide to developers and applicants for planning permission (See Ministry of Planning and Sustainable Development 1988), the primary objective of development control is to ensure that the development which is being implemented is consistent with and in accordance with policy and the development plan. Analysis of the remaining objectives and standards confirmed that TCPD do have the ability and the scope to enforce and regulate crime prevention in the built environment. The guide has not been updated since 1988 when situational crime prevention techniques were still emerging and under developed.

The lack of standardisation for residential and commercial security increases risk to public safety, particularly in low income communities which have limited access to security measures. The nature of building control which is often defined to single plots also reduces the impact of security measures since the quality of security can vary from house to house. Large scale developments would allow security standards and housing design to be more effectively installed and regulated.

2013 crime statistics show the Northern police division to have the 4th highest rate of residential burglary nationally (12%) and the 2nd highest rate of robbery (13%). This indicates that this area is at risk of acquisitive crime which is likely to target residential and commercial properties.

Design of security measures

Target hardening measures in residential properties largely consist of high walls/fences with razor wire, bars on windows and doors, guard dogs, shutters and in some instances security guards. These measures may be necessary in reflection of the crime rates and risk in the area; however, their impact on fear is likely



to be more degenerative as discussed earlier. Risk to residents is also heightened since surveillance is limited inside and outside the dwelling boundary and therefore creates a false sense of security when entering and exiting the premises. It is not to say that these measures should be removed, but the aesthetic quality and the impact on surveillance and fear is potentially more damaging to the risk of crime and victimisation.

Measures which hinder surveillance may have a slight impact on the effort required to proceed with a criminal act, but the perceived risk of being caught is significantly reduced and therefore outweighs the increased effort. Offenders are also extremely flexible and adaptive and target hardening measures alone are not sustainable.

Even where transparency has been attempted, criminal access has not been considered fully. Some dwelling boundaries and entrances use bar gates which have horizontal platforms in the centre and allow easy footing for potential intruders. If the remaining boundary is not transparent, and the offender exceeds the boundary of the property, the offender is hidden from public sight and the resident is at increased risk.

The lack of building standards in Trinidad also has an impact on the security of properties. Doors and windows are primary entrance and exit points and the quality of materials used significantly impacts the effort required to enter a property.

Discussion

Good governance is of major importance for effective crime prevention and building socially sustainable communities. Multi-agency partnerships are required at all levels, from central government through regional corporations to local community groups and information sharing is a vital component to these partnership efforts. Crime prevention has developed rapidly over the past few decades now requiring support and assistance from other fields. It is a collective effort and cannot be the sole responsibility of law enforcement agencies.

This study was faced with tremendous difficulties in gaining access to suitable data from both government and non-government organisations. It was recognised that there is a struggle existing between ministries over the sharing of responsibility, and there are few communication or management structures in place. This struggle has an impact on the ability to develop effective crime prevention strategies and maximise resources. Currently, responsibility lies with the Ministry of National Security and the Ministry of Justice (post crime) which leaves little scope for innovative thinking.

There were also governance issues identified within the Ministry of Planning and Sustainable Development which may hinder effective CPTED planning. With TCPD operating from central government, there is a lack of localised action or regulation through regional corporations. This is needed to facilitate partnership working and help develop a thorough understanding of the social environment at the neighbourhood scale. A productive working relationship with regional corporations which is backed by policy and law for enforcement and regulation would help reduce this gap and improve the current governance structure in which to enforce CPTED principles.

A synthesis/ summary of the findings of this analysis was provided to the three professional organisations which took part in Part A of this fieldwork. The purpose was to explore the impact that

this information had on professional's ability to make informed decisions for CPTED, if they considered the information to be important/impactful and how it helped them integrate CPTED into sustainable development planning.

Appendix J

TCPD Planning Professional Final Focus Group

Participant Name Profession and Job title and definition	P1: Male- Land use planner- Strategies and ways of incorporating guidance and design of your urban environment with the specific means of preventing crime
Participant Name Profession and Job title and definition	P2: Female - Senior Land Use Planner- Promoting an environment that is safe for all
Participant Name Profession and Job title and definition	P3: Male- Town Planner- Planning techniques, standards and policies to create a safe environment
Participant Name Profession and Job title and definition	P4: Female- Graduate Intern- Strategies that can be implemented to ensure safety of an area
Participant Name Profession and Job title and definition	P5: Female- Town Planner- Reducing the opportunity for crime through urban design
Participant Name Profession and Job title and definition	P6: Female - Town Planner- Using urban design and by extension urban planning as a tool to promote safety and security within neighbourhoods or regions
Participant Name Profession and Job title and definition	P7: Male- Land use planner- Provides an opportunity to address crime from a different perspective whereby you use environmental design to develop communities which are safer to all
Participant Name Profession and Job title and definition	P8: Female- Town planner- Social strategies and design strategies used at different scales to incorporate crime and safety in developments at the neighbourhood and building scale
Participant Name Profession and Job title and definition	P9: Male- Urban Planner- The use of urban design strategies as well as community development strategies to make safer communities
Participant Name Profession and Job title and definition	P10: Female- Planning intern- Urban design along-side social planning to prevent crime or criminal activity in an area specific to the social issues that result in the crime itself.
Participant Name Profession and Job title and definition	P11: Male- Town Planner- A design orientation used to discourage criminal activity. Part of it is common sense on the part of the developer but this research is formative to bringing the concept into legislation in formalising it further in how we actually execute it and approve development plans
Participant Name Profession and Job title and definition	P12: Female- Town Planner- CPTED is not currently supported in our existing practice of Town and Country Planning in Trinidad and Tobago and I don't know if a real appreciation of it will ever really filter in, even with the new legislation
Participant Name Profession and Job title and definition	P13: Male- Town Planner- Looks at impacting the social sphere of a geographic area or community by land use planning and urban design techniques by looking at applying planning principles to get to the root of a lot of the criminal activities and symptoms by tackling the social issues.
Date	15/11/14
Location	Eric Williams Financial Complex, TCPD regional office, Port of Spain
Meeting context	To assess the impact of context provision on professionals ability to understand and apply CPTED
Duration of meeting	1 hour 30 minutes

P= Positive N=Negative

R=Resolved U=Unresolved

No	Resolution Code	Conflict Code	Main Category	Generic Category	Sub Category	Context Category
1	P0B61R	0B61	0/Communication	B/ MD working specific to CPTED	6/Knowledge gap	1/ Context provision resolved CPTED knowledge gap
2	N00B41U	00B41	00/Application	B/ MD working specific to CPTED	4/ Institutional conflicts	1/ Can't see how CPTED can be integrated into planning process
3	N0C71U	0C71	0/Communication	C/Conflicts specific to CPTED	7/ clear	1/ CPTED does not specify crime types or impact
4	P00B42R	00B42	00/Application	B/ MD working specific to CPTED	4/ Institutional restriction	2/ Use of clauses to overcome enforcement barriers
5	P0C72R	0C72	0/Communication	C/Specific to CPTED	7/ clear	2/ Context provision improved understanding of CPTEDs focus
6	P0C41R	0C41	0/Communication	C/Specific to CPTED	6/ Not adaptive	1/ Context provision changed perception of impact on residents
7	N00D21U	00D21	00/Application	D/Specific to T&T context	2/ Culture	1/ Inadequate data collection by authorities
8	P00A33R	00A33	00/Application	A/ Generic MD working	3/Poor info sharing/ partnership working	3/ Recognised the need for partnership working
9	N00B44U	00B44	00/Application	B/MD working specific to CPTED	4/ Institutional conflicts	4/ Lack of will within leading agencies
10	N00B44U	00B44	00/Application	B/MD working specific to CPTED	4/ Institutional conflicts	4/ Lack of will within leading agencies
11	P00D22R	00D22	00/Application	D/Specific to T&T context	2/ Culture	2/ Public education needed due to culture of developments in Trinidad
12	P0C72R	0C72	0/Communication	C/Specific to CPTED	7/ clear	2/ Context provision improved understanding of CPTEDs focus
13	N00D51U	00D51	00/ Application	D/ Specific to T&T context	5/ Crime type/offender MO	1/ Crime in Trinidad is often pre-meditated and cannot be prevented

14	N00B45U	00B45	00/Application	B/ MD working specific to CPTED	4/ Institutional conflicts	5/ Lack of power to enforce maintenance
15	N00A41U	00B51	00/Application	A/ Conflicts in MD working	4/ Conflict of power	1/ Political loophole remains in planning system
16	N00D23U	00D23	00/Application	D/ Specific to T&T context	2/ Culture	3/ Government never follow through to implementation
17	N00B46U	00B46	00/Application	B/ MD working specific to CPTED	4/ Institutional conflicts	6/ Reluctance to engage
18	N00B46U	00B46	00/Application	B/ MD working specific to CPTED	4/ Institutional conflicts	6/ Reluctance to engage
19	P00B47R	00B47	00/Application	B/ MD working specific to CPTED	4/ Institutional conflicts	7/ TCPD recognised their role as a lead agency for change
20	P00B52R	00B52	00/Application	B/ MD working specific to CPTED	5/ Policy conflicts	2/ TCPD recognised the need for standards for enforcement
21	P00B62R	00B62	00/Application	B/ MD working specific to CPTED	6/ Knowledge gaps	2/ Context provision guides enforcement
22	P00B62R	00B62	00/Application	B/ MD working specific to CPTED	6/ Knowledge gaps	2/ Context provision guides enforcement
23	P00B62R	00B62	00/Application	B/ MD working specific to CPTED	6/ Knowledge gaps	2/ Context provision guides enforcement
24	N00D21R	00D21	00/Application	D/ Specific to T&T context	2/ Culture	1/ Recognised the need for better data collection by authorities

No	Conflict code	Evidence
1	P0B61R	P3: As a set of guided principles, I think CPTED is great now. There is a lot of information that you have to wrap your head around in order to fully appreciate the relationship between crime and design which I didn't understand before this contextual information was provided.
2	N00B41U	P11: I understand the framework so much more now but what is still a little unclear to me is how we can integrate CPTED as a whole into the planning process and the work that we do.
3	N0C71U	P8: One thing I am still unsure of is if some CPTED strategies are much more important than others, or are there particular strategies which will target specific crime types?
4	P00B42R	P12: In terms of ensuring regulation, I think if we put in a clause or condition which specifies how specific designs are used. For example, open space, we could tack on and encourage open spaces to be in specific areas to encourage natural surveillance and maximise on residential amenities. Now that we know <i>why</i> open space is important and what impact it can have other than just providing nice places for people to use we can incorporate this into our regulations.
5	P0C72R	P7: It seems that CPTED is considered not just with regards to the opportunistic nature of crime but also by the end user perspective, which is where it will have the most impact.
6	P0C61R	P7: I think the approach that she has used by engaging communities in this analysis is very good and something we could all learn from. Normally when I think of CPTED I just think of low hedges and big windows, but now I see that it is so much more than that. She has looked at this from a different perspective, by asking the residents what makes them fearful and what aspects impact on their perception of that place. At the end of the day, these are the people that will be using the spaces that we create and if we don't fully appreciate how these places make them feel then changing the design is a waste of time.
7	N00D21U	P6: I think what is missing here is that we need more information about particular crime types in particular geographic locations and the opportunities which may have contributed to that crime occurring there. But T&T don't produce that data so we have a real issue there.
8	P00A33R	P8: I think TCPD are limited in implementing CPTED because we need partnerships with other ministries and municipal corporations. TCPD are responsible for authorising developments with sound design principles, but I think that the TTPS should be the coordinating agency so if anything happens in an area they will be the ones to call the relevant services to get the problem resolved for example the lighting companies, or maintenance people etc.
9	N00B44U	P2: I think the regional corporations should be responsible; they are the ones that coordinate all the agencies. The municipal police should be the agents for enforcement and they coordinate the agencies. But will has to be there on a personal level.
10	N00B44U	P1: What still bugs me though, is If the regional corporations are responsible for controlling all these agencies, why is nothing done. The lighting, the pavements and things, they rarely make any positive changes, I don't know if this is a lack of knowledge or funding or what. Nobody actually sits down and coordinates these things to be done.
11	P00D22R	P3: The public need to be educated also. In this country people build their own houses. If the public don't understand the benefits of different types of designs, then they might consider alternative approaches.
12	P0C72R	P11: I think she makes a good point about migration and population turnover. I had never considered this to be remotely associated with crime, but it is true. That has a lot to do with planning and regulation of tenure and things. I never appreciated that such high transiency would reduce social cohesion which in turn may impact on crime and natural surveillance.
13	N00D51U	P10: Many of the violent crimes here too are crimes of revenge. CPTED can't stop that because it is pre-meditated and they have a strong motivation to commit the crime regardless of the consequences.
14	N00B45U	P9: I think we still have a bit of an issue with maintenance, specifically with regard to abandoned lots in residential and commercial areas. Whose responsibility is it to keep this maintained if we can't force the owner? The corporation does have some power to go into derelict properties, but it has to get to a certain state of disrepair before this actually happens.
15	N00A41U	P4: But as Victoria pointed out in the report we do have the political loophole of the ATTP, so as much as we try to regulate and try to implement the CPTED principles, nobody has to comply. The current planning laws allow the ATTP to give freedom to whoever they want to give it to
16	N00D23U	P3: The biggest problem in planning is that everyone's goal is to get something in a document. Integrating CPTED into planning will probably only produce a policy or a guideline but nothing ever actually happens on the ground.
17	N00B46U	P4: CPTED can't just happen in planning; It needs to be a collaborative effort. We put in the open spaces, we tell you you're walls can't be higher than a certain level but at the end of the day there is no legislation that says people have to make these changes so what else can we do?
18	N00B46U	P8: We need standards, we need to encourage management that these standards are important and they need communicating to other agencies. Unless we stated in a law that TCPD had power over these things then how could we enforce that? We don't have any say over what lamps TnTEC use, that's their business.

19	P00B47R	P6: I think TCPD in conjunction with the ministry should inform other agencies what are their roles in CPTED. This is a design oriented concept and we need to enforce it.
20	P00B52R	P8: I think we need some standardisation; without standards we will struggle to implement anything.
21	P00B62R	P6: I think all the social information which was provided was very important for our analysis as planners. I think it helps us in policy making and regulating design also.
22	P00B62R	P10: Without this knowledge how would we know what to look for when implementing CPTED? We don't have the knowledge to evaluate crime in this way, but using this model we can discuss different themes with communities and think about the public perception of the spaces we create.
23	P00B62R	P11: I feel that there are a lot of changes we need to make in this study area now, we really need to sit down and digest this information and begin making some changes.
24	N00D21R	P1: I think what I am missing is a link between different types of crime, where this occurred within the study area, but this information is unavailable. How can we deal with CPTED when we don't have that information? The police only count crime at district level. We could do more of a geographical analysis and ask people what roads are more fearful and why.

OpenPlan Planning Professional Final Focus Group

Participant 1	P1M: Town Planner_ Open plan consulting
Participant 2	P2F: Business development/community engagement officer_ Open plan consulting
Participant 3	P3M: Architect_ Lincoln Council
Participant 4	P4M: Urban Designer_ Lincoln Council
Participant 5	P5M: Planner_ Lincoln Council
Date	13/04/15
Location	Sparkhouse Studios, Ropewalk, Lincoln.
Meeting context	To identify barriers to interpreting and applying CPTED
Duration of meeting	1 hour 25 minutes

No	Resolution code	Conflict code	Main Category	Generic Category	Sub Category	Context Category
1	P0B61R	0B6	0/Communication	B/ MD working specific to CPTED	6/ Knowledge gap	1/ Context provision resolved CPTED knowledge gap
2	P00A31R	00A3	00/Application	A/ Generic conflicts with MD working	3/ Poor info/Partnerships	1/ Recognised the need for partnership working
3	P0B63R	0B6	0/ Communication	B/ MD working specific to CPTED	6/ Knowledge gap	3/ Context provision has changed perception of environmental characteristics
4	P00A31R	00A3	00/Application	A/ Generic conflicts with MD working	3/ Poor info/Partnerships	1/ Recognised the need for partnership working
5	P0B53R	0B5	0/Communication	B/ MD working specific to CPTED	5/ Policy conflict	3/ Context provision communicates CPTED better than previous DOC policies/guidelines
6	P0B63R	0B6	0/Communication	B/ MD working specific to CPTED	6/ Knowledge gap	3/ Context provision has changed perception on environmental characteristics
7	P0B54R	0B5	0/Communication	B/ MD working specific to CPTED	5/ Policy conflict	4/ Context provision demonstrated link to planning principles

8	P0B53R	0B5	0/Communication	B/ MD working specific to CPTED	5/ Policy conflict	3/ Context provision communicates CPTED better than previous DOC policies/guidelines
9	P0C41R	0C5	0/Communication	C/ Conflicts specific to CPTED	7/ clear	3/ Context provision communicated how CPTED can integrate with planning policy
10	P0C41R	0C5	0/Communication	C/ Conflicts specific to CPTED	7/ clear	3/ Context provision communicated how CPTED can integrate with planning policy
11	P00C31R	00C3	00/Application	C/ Conflicts specific to CPTED	3/ Not practical	1/ Cannot implement CPTED without contextual knowledge
12	P0C73R	0C7	0/Communication	C/ Conflicts specific to CPTED	7/ clear	3/ Context provision communicated how CPTED can integrate with planning policy
13	P00B55R	00B5	00/Application	B/ MD working specific to CPTED	5/ Policy conflict	5/ Recognised the need for integration since there are too many planning standards
14	N00B31R	00B3	00/Application	B/ MD working specific to CPTED	3/ Bureaucratic conflict	1/ Developers avoid standards because there are so many. Resolution= integration
15	N00B21R	00B2	00/Application	B/ MD working specific to CPTED	2/ Conflict of Priorities	1/ Crime is not a priority to the developer
16	N0B64R	0B64	0/Communication	B/ MD working specific to CPTED	6/ Knowledge gap	4/ CPTED needs integrated into planning qualifications to aid understanding
17	P00B48R	00B4	00/ Application	B/ MD working specific to CPTED	4/ Institutional restrictions	8/ Public sector housing should lead CPTED as best practice for engagement
18	N00B61R	00B6	00/ Application	B/ MD working specific to CPTED	6/ knowledge	1/ Conflicting priorities are a result of the lack of knowledge which effect engagement
19	P00B22R	00B65	00/ Application	B/ MD working specific to CPTED	2/ Conflict of priorities	2/ Context provision has highlighted shared priorities
20	P0B65R	0B6	0/ Communication	B/ MD working specific to CPTED	6/ Knowledge gap	5/ Context provision has highlighted mutual goals
21	P00B49R	00B4	00/Application	B/ MD working specific to CPTED	4/ Institutional restrictions	9/ CPTED provides a bottom up approach to planning
22	P0B61R	0B6	0 /Communication	B/ MD working specific to CPTED	6/ Knowledge gap	1/ Context provision resolved CPTED knowledge gap

23	P0B64R	0B6	0/ Communication	B/ MD working specific to CPTED	6/ Knowledge gap	4/ CPTED needs integrated into planning qualifications to aid understanding
24	P0C73R	0C7	0/ Communication	C/ Conflicts specific to CPTED	7/ clear	3/ Context provision communicated how CPTED can integrate with planning policy
25	P0B61R	0B6	0/ Communication	B/ MD working specific to CPTED	6/ Knowledge gap	1/ Context provision resolved CPTED knowledge gap
26	P00B61R	00B6	00/ Application	B/ MD working specific to CPTED	6/ Knowledge gap	1/ Context provision resolved CPTED knowledge gap

P=Positive N=Negative

R=Resolved U=Unresolved

No	Conflict code	Evidence
1	P0B61R	P1: "The area I had most difficulty previously was actually identifying situations, whether it be design or the functioning of the environment. With this context information I am now able to analyse situations and say oh yes, I can see why that would create fear, or I can see why people would change their behaviour"
2	P00A31R	P5: "The thing that stood out to me which perhaps I hadn't realised before is that it wouldn't really take that much effort to make a big impact on the way people behave and feel in these areas but it really would require a lot of partnership working and I don't think I'd really considered that until now"
3	P0B63R	P2: "It made me think differently about certain characteristics which I had previously considered as a positive thing, such as traffic for instance. I would have previously said this was a good thing because it would reduce speeding, but I never really considered the impact this had on people's perception of vulnerability or even the impact on their behaviour if they get frustrated".
4	P00A31R	P4: "There has to be a real investment in building trust between the authorities and the community at different levels but successful partnership working to tackle those issues wouldn't take a big effort. But the fact that there is nothing laid out to say that it is these people or these people who do each job, I think that makes it difficult. It would take quite an innovative approach to say let's work on this together".
5	P0B53R	P1: "I've got a much better feeling of the potential for design and maintenance measures in tackling crime and anti-social behaviour, more than what I got from the standard designing out crime manuals which to me I feel is a lot more limited in its scope. This could easily be integrated into the work we do".
6	P0B63R	P3: "I definitely understand a lot more about CPTED now. This information is very informative in terms of the evidence and theory behind designing out crime and this makes you understand why certain factors impact people in different ways"
7	P0B54R	P5: "When we looked at the CPTED framework and then listened to the information which actually derived from a whole other concept, the connections were just screaming out at you. It was all about

		crime in reference to the CPTED principles but I could see how it was embedded with sustainable development and other planning principles. This is something we are currently lacking in sustainable development practice”
8	P0B53R	P4: “It is often a given in other manuals that certain factors contribute to this or that but we never really understand <i>why</i> . The guidance that we generally rely on is very simplistic and doesn’t really explain why. But having talked through this contextual information i can see exactly why certain things impact behaviour and things are just screaming out at me which I possibly wouldn’t have been able to articulate without having been provided this information”.
9	P0C41R	P5: “I see the use of CPTED differently now. At first I thought it was just something you considered with regards to the actual design, and possibly at the end, which would have been the architect’s job. But now, I think that if you are going to use this framework [CPTED], if you were able to build it into each of the planning stages, so using it at the development level, and at the maintenance level etc. I think it should be used in a very layered way because it is live, and I can see now that every change in an area will effect different elements of crime and vice versa. So if you put it in at the foundations, as change occurs, it is more likely to occur in a sustainable, positive and safe way rather than considering it as a stand-alone problem which is not connected to anything else, or being something that is applied later on”
10	P0C41R	P2: “I think this information helps you to see how crime prevention and CPTED can naturally integrate into planning and urban design and sustainable development principles”
11	P00C31R	P1: “If I was working on a project and all I had access to is the CPTED principles I wouldn’t be able to identify these issues. We would always need this type of work done before we can consider the actual problems in the area”
12	P0C73R	P3: “You could link this very effectively with place check, code for sustainable homes or building for life. Building for life has elements of CPTED in it, but they don’t really recognise the full relationship or explain why or what the implications are.”
13	P00B55R	P2: “CPTED could easily be integrated into building for life. I think it would be better received if it was integrated rather than a stand-alone concept because in this industry we already have a lot of standards”.
14	N00B31R	P5: “Sometimes we get all these new standards coming up and because there are so many, developers tend to question the value of them because they just see it as another hurdle. Often unless it is statutory that a certain set of principles must be applied then people tend to just avoid them”
15	N00B21R	P4: “The problem for developers is the council and they make us do all these things but at the end of the day all we care about is making money and there is so much red tape. For a private sector developer they don’t have a passion for creating great places but they don’t appreciate the profitability of actually creating great places. I think this type of information could help them though”.
16	N0B64R	P4: “If this knowledge, was built into the way in which we are taught in training we would have a better appreciation of the relationships and impacts of different spaces on people’s behaviour and perception of an area”
17	P00B48R	P3: “I think CPTED should be more integrated into public sector housing so it becomes more familiar. At the moment we are kind of pushed to apply it but if public sector housing did it on a day to day basis then it would set the foundations and create an expectation for other development processes”
18	N00B2/61R	P2: “The problem is that we are trying to impose the values of a socially responsible body onto somebody and that’s not what motivates them. The public sector authority and the private sector developer have different priorities. It’s not necessarily a passion for creating great places but then at the same time a great place should create value so I guess it just comes down to a lack of knowledge and appreciation so how do you change that”.

19	P00B22R	P2: "From a place making perspective there is so much in the contextual information that we can use, it interacts well with social, environmental and economic issues which are all our main priorities."
20	P0B65R	P4: "It's strange because a lot of these things which are related to crime, we talk about these all the time but we talk about them in a different way, when we're talking about place making. It's not just about reducing crime, it's about bringing communities together and other things; we just don't look at it that way but I can see the relationship now".
21	P00B49R	P2: "I think it was really interesting how the members of the public articulated their concerns because it gives such great insight and often that's not really reflected in planning"
22	P0B61R	P3: "I understand the potential so much more now; I didn't appreciate the impact of CPTED before this".
23	P0B64R	P2: "I think if this type of CPTED information was built into training and education for our professions it would reduce the feeling of it being a tick box situation and maybe help change mind sets."
24	P0C73R	P4: "The contextual information is so important, even when you think of places that you have been recently, when you talk about doing some of these things you realise that you talk about them already but in a different way, with a different focus perhaps. That really shows how CPTED could naturally integrate into many of the policies we already use, it's not <i>JUST</i> that it reduces crime"
25	P0B61R	P3: "When we were first looking at the framework, I wasn't really sure about the terminology. I got the jist of what it meant but I couldn't really think how I would use it. But after seeing that information, I can't think of a better way of putting it and I understand what it all means practically now"
26	P00B61R	P4: "I feel that the kind of conversations we've had today with mixed backgrounds and mixed skills, then having been provided that contextual information, I feel a lot more confident in talking about CPTED now than I would have before today. I feel like I would now be able to assess situations differently, from a different perspective."

DOCG Planning Professional Focus Group

Participant 1	P1M CPDA
Participant 2	P2M CPDA
Participant 3	P3M CPDA
Participant 4	P4F CPDA
Participant 5	P5M CPDA
Participant 6	P6M Housing Officer (county council)
Participant 7	P7M CPDA
Participant 8	P8M CPDA
Participant 9	P9F CPDA
Participant 10	P10 Architect
Participant 11	P11M CPDA
Participant 12	P12M CPDA
Date	17.09.15
Location	Llandrindodd Police and Fire Station, Wales
Meeting context	CPTED post context provision
Duration of meeting	1h:20m

No	Conflict Code	Main Category	Generic Category	Sub Category	Context Category
1	P0B67R	0/Communication	B/Conflicts in MD working specific to CPTED	6/Knowledge gap	7/ Context information has reinforced relationship between design and crime
2	N00B51U	00/Application	B/ Conflicts in MD working specific to CPTED	5/ Policy Conflict	6/ No policies in place to ensure required levels of governance
3	P0B66R	0/Communication	B/ Conflicts in MD working specific to CPTED	6/ Knowledge Gap	1/ Context provision resolved CPTED knowledge gap
4	N0B68U	0/Communication	B/ Conflicts in MD working specific to CPTED	6/ Knowledge gap	8/ Education needed to reinforce relationships between design and behaviour
5	P0B67R	0/Communication	B/ Conflicts in MD working specific to CPTED	6/ Knowledge gap	7/ Context information has reinforced relationship between design and crime

6	P00B56R	00/Application	B/ Conflicts in MD working specific to CPTED	5/ Policy conflict	6/Believed to help planning control in developing countries without policies
7	P0B64R	0/Communication	B/ Conflicts in MD working specific to CPTED	6/ Knowledge gap	4/ CPTED needs integrated into planning qualifications to aid understanding
8	P0B67R	0/Communication	B/Conflicts in MD working specific to CPTED	6/Knowledge gap	7/ Context information has reinforced relationship between design and crime
9	P0B61R	0/Communication	B/Conflicts in MD working specific to CPTED	6/Knowledge gap	1/ Context provision resolved CPTED knowledge gap
10	P0B56R	0/Communication	B/Conflicts in MD working specific to CPTED	5/ Policy Conflict	6/ Integration into SD policies needed to ensure engagement
11	P00C31R	00/Application	C/ Conflicts specific to CPTED	3/ Practicality	1/ Context model helps operationalise CPTED principles
12	P00C41R	00/Application	C/ Conflicts specific to CPTED	4/ Sustainability	1/ Social context information vital for sustainable CPTED planning
13	N00D21U	00/Application	D/ Conflicts specific to area context	2/ Culture	1/ CPTED limited in Trinidad due to single lot developments
14	P00B69R	00/Application	B/Conflicts in MD working specific to CPTED	6/Knowledge gap	9/ Context information will help reinforce necessary components for analysing the social environment
15	N00B57U	00/Application	B/Conflicts in MD working specific to CPTED	5/Policy conflict	7/Whole planning system needs reviewed in order to regulate building control
16	P00B69R	00/ Application	B/Conflicts in MD working specific to CPTED	6/Knowledge gap	9/ Context information will help reinforce necessary components for analysing the social environment
17	N0B610U	0/Communication	B/ Conflicts in MD working specific to CPTED	6/Knowledge gap	10/ Existing knowledge barrier re link between CPTED and social sustainability

18	P0B611R	0/Communication	B/ Conflicts in MD working specific to CPTED	6/Knowledge gap	11/Context provision has reinforced the need for context specific design and broader external factors
19	N0B68U	0/Communication	B/ Conflicts in MD working specific to CPTED	6/Knowledge gap	8/ Education needed to reinforce relationships between design and behaviour
20	P00C41R	00/Application	B/ Conflicts in MD working specific to CPTED	4/ Sustainability	1/ Social context information vital for sustainable CPTED planning
21	P0B611R	0/Communication	B/Conflicts in MD working specific to CPTED	6/Knowledge gap	11/Context provision has reinforced the need for context specific design and broader external factors
22	N00B49U	00/ Application	B/ Conflicts in MD working specific to CPTED	4/Institutional restrictions	9/ CPTED relies on pre planning engagement
23	P0B612R	0/Communication	B/ Conflicts in MD working specific to CPTED	6/Knowledge gap	12/Importance of context information is reinforced
24	P00B69R	00/Application	B/Conflicts in MD working specific to CPTED	6/Knowledge gap	9/ Context information will help reinforce necessary components for analysing the social environment
25	N00A71U	00/Application	A/Generic conflicts in MD working	7/Resources	1/ No capacity to conduct thorough social analysis year in year out
26	P00B69R	00/Application	B/Conflicts in MD working specific to CPTED	6/Knowledge gap	9/ Context information will help reinforce necessary components for analysing the social environment

P=Positive N=Negative

R=Resolved U=Unresolved

No	Conflict code	Evidence
1	P0B67R	P12: The information has reinforced my view that there are important relationships between environmental design and social behaviour and that we need more site specific analysis
2	N00B51U	P1: It is difficult to promote concepts of CPTED in countries where there are very weak planning and enforcement regimes. Clearly the Caribbean as in many other parts of the world has governance and delivery infrastructures which are not fully developed, weak and in some cases corrupt. So to make CPTED effective there needs to be a supportive legal and policy framework in place, quality assurances in terms of delivery and sufficient knowledgeable practitioners to advise developers on detail and how to implement concepts.
3	P0B66R	P3: The thing that stood out to me the most was the relationship between some of the CPTED principles which perhaps I had previously missed. Like Access control and how this incorporates both target hardening and boundary definition. I always just considered them to be three separate concepts but this [context] information has really made it clear that they work towards the same thing of <u>restricting/preventing access to targets and unauthorised places</u> .
4	N0B68U	P2: Yes I agree [with above] and I think now, there needs to be more education to reinforce the view that access control is far more than just physical barriers, in particular how space is defined, boundary definition, guardianship, responsibility and management of spaces
5	P0B67R	P8: The context information has reinforced my belief that the environment affects both social behaviour and attitudes to crime. And in fact, attitudes can have a bigger impact on the way in which public space is used than I had previously appreciated.
6	P00B56R	P9: I think the information is very important for CPTED planning, particularly in less developed countries like Trinidad which do not have a well-developed planning systems or a history of policy development
7	P0B64R	P8: I definitely think the information provided would help educate professionals from other discipline's like planning and architecture who do not have prior knowledge of crime, perhaps through extra qualifications. Also in countries with similar contexts to Trinidad so they can appreciate the impact their planning system has on crime and the quality of life.
8	P0B67R	P4: I think the information helps consider designing out crime differently. It definitely reinforces that aspects wider than physical design of buildings can impact social behaviour.
9	P0B61R	P3: I can't think of any aspect of the CPTED framework which I am unfamiliar with now. Previously I had issues with the Positive Reinforcement concepts but this information makes it much clearer.
10	P00B56R	P1: I think currently there is still a governance barrier in terms of developers and private planners actually engaging with designing out crime, especially in the UK who often view planning system requirements as unnecessary red tape. A major policy change will be needed to integrate the context evaluation model and the CPTED framework into sustainable development policies and standards so that they become a necessary and integrated aspect of planning and urban design.
11	P00C31R	P2: I think the model for evaluating social context provides a useful way of operationalising the principles of CPTED. I think this is scale dependent though, because too large a scale, the analysis would use detail.
12	P00C41R	P9: I think the information provided would help to generate more sustainable crime prevention planning; sustainable development needs to consider crime prevention and community safety issues and one of the most effective ways to deliver this is through CPTED.
13	N00D21U	P7: The main problem in Trinidad is that properties are built individually so there is no room for regulation or consistency
14	P00B69R	P5: I think the context information provided is important, it helps appreciate the complexity of issues which all impact human activity in one way or another. I think this is often missed by many professionals in the design field, and quite clearly more so in developing countries. It really does demonstrate how far we have come as a country in respect of CPTED and designing out crime.
15	N00B57U	P8: In terms of the study area, as a start the Government needs to review its whole system in respect of planning and building control.
16	P00B69R	P4: I don't think planners or designers would know the first thing about how to analyse social context without that model. We always try to provide insight to the background analysis that we do on crime rates but the links aren't always clear to them*
17	N0B610U	P5: I think the contextual information is very important but I am already aware of the importance of designing out crime on sustainability. We always ensure that the design specifications we implement are sustainable, that is why we have the standards we do.
18	P0B611R	P7: This context information has definitely made me realise that CPTED must be incorporated on a site specific basis. I think a lot of CPDA's just walk into a development and apply the same principles to each housing estate. But this analysis proves that there are many other influencing factors which come into play.
19	N0B68U	P11: Architects and planners need a much greater understanding of the CPTED principles and the real reasons why they should be implemented; they should be taught this before becoming established practitioners. This kind of information may help them realise the importance.
20	P00C41R	P9: On a scale of 1-10, this information is 10++++ in terms of importance in sustainable CPTED planning

21	P0B611R	P2: This information definitely reinforces that principles must be implemented on a site specific basis and they should not be generic.
22	N00B49U	P5: CPTED should be considered more by planners and architects at the pre planning stage
23	N0B612U	P6: CPTED should always be site specific and local research undertaken to provide context, I think this is what is not understood by many people
24	P00B69R	P8: Architects and planners must be more aware of the CPTED principles and the implications of being too CPTED conscious. I think this type of information could help open their eyes to why it is so important.
25	N00A71U	P9: A truly multi-disciplinary approach like the analysis conducted here is valid and necessary for reaching sustainable recommendations however I don't think we have the capacity to sustain this level of work year in year out
26	P00B69R	P5: Reading the Community Safety section of any Design Access Statement reveals how little developers and architects understanding actually is. I think information like this [context information] could help them

Glossary

ACPO	Association of Chief Police
ALO	Architectural Liaison Officer
BWT	Broken Windows Theory
CPTED	Crime Prevention Through Environmental Design
DCA	Directed Content Analysis
DOCG	Designing out Crime Group
RAT	Routine Activity Theory
RCT	Rational Choice Theory
SBD	Secured by Design
SBT	Social Bond Theory
SCP	Situational Crime Prevention
SCT	Social Control Theory
SDT	Social Disorganisation Theory
ST	Strain Theory
SLT	Social Learning Theory
TCPD	Town And Country Planning Division

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ⁱ ACPO was dissolved in April 2014 and replaced by the National Police Chiefs Council. Since this PhD began in 2011, for ease of reference the thesis will continue to refer to SBD as being owned by ACPO.